DOCUMENT RESUME

ED 153 657 IR 006 053

TITLE Cost/Benefit Analysis of a Catalog System for the Virginia Beach Department of Public Libraries.

INSTITUTION Virginia Beach Dept. of Data Processing, Va.; Virginia Beach Dept. of Public Libraries, Va.

PUB DATE Jan 78

NOTE 122p.; Not available in paper copy

EDRS PRICE MF-$0.83 Plus Postage. PC Not Available from EDRS.

DESCRIPTORS *Catalogs; *Computer Output Microfilm; *Cost Effectiveness; Feasibility Studies; *Library Automation; Library Technical Processes; *Public Libraries; Systems Analysis

ABSTRACT

This report of a study to determine the economic feasibility of automating catalog production and maintenance for a public library system includes a description of the manual catalog system in use and requirements of the new system. Assessment of benefits and costs were determined for three alternative approaches: (1) retention of the card catalog; (2) a Computer Output Microfilm (COM) catalog produced within the city; and, (3) a COM catalog produced by an outside source. The study concluded that a COM catalog system is the most cost effective approach to meet program objectives, and a vendor operated COM system is the least costly while also featuring the shortest development time. Tables of costs and calculations are included. (Author/JAB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED153657

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

COST/BENEFIT ANALYSIS
OF A
CATALOG SYSTEM
FOR THE
VIRGINIA BEACH DEPARTMENT OF PUBLIC LIBRARIES

COMPILED BY

VIRGINIA BEACH DEPARTMENT OF PUBLIC LIBRARIES

AND

VIRGINIA BEACH DEPARTMENT OF DATA PROCESSING

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Rheda Epstein

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

JANUARY 1978

IR006053

ABSTRACT

This cost/benefit analysis determined the economic feasibility of automating catalog production and maintenance for the Virginia Beach Department of Public Libraries. The manual catalog system in use is described and requirements of the new system are stated. Assessment of benefits and costs were determined for the three alternative approaches: 1) retention of the card catalog; 2) a COM catalog produced within the city; 3) and a COM catalog produced by an outside source.

TABLE OF CONTENTS

SECTION I

Abstract Page i

Table of Contents Page ii

Introduction to Cost Benefit Analysis Page 1

Outline of Cost Benefit Analysis for Virginia Beach Department of Public Libraries Page 2

Management Summary Page 4

SECTION II

Forms of Library Catalogs Page 7

Description of Present System Page 9

Requirements of New System Page 11

SECTION III

Assessment of Impact and Cost

Introduction to Methodologies Page 12

Determination of Present System Costs Page 12

Determination of Proposed System Costs Page 17

Assessment of Benefits Page 26

SECTION IV

Conclusions Page 39

SECTION V

Glossary Page 40

Appendix Page 44

INTRODUCTION TO COST/BENEFIT ANALYSIS

The major objective of a cost/benefit analysis is to determine the economic feasibility of developing alternatives to the current system. It insures that the user receives the best possible return for the investment. A concise determination of the costs and benefits of a proposed system must be developed and numerically translated permitting the user to make a sound investment decision.

The basic components of a cost/benefit analysis are the estimated costs and associated benefits of the project. Evaluation is made in six major categories:

PERSONNEL

Includes both user and data processing personnel.

EQUIPMENT

Includes all office machines (computers, calculators, typewriters, copiers, etc.) that are used to create and maintain records.

SPACE

Includes the total square footage utilized by the user and data processing departments for the specific project.

SUPPORT SERVICES

Includes any vendor costs associated with the project.

SUPPLIES

Includes all materials used in support of the project.

OVERHEAD

Includes such items as employee health and life insurance, workmen's compensation, utilities, etc.

OUTLINE OF COST/BENEFIT ANALYSIS FOR

VIRGINIA BEACH DEPARTMENT OF PUBLIC LIBRARIES

OBJECTIVES OF THE STUDY

The purpose of this cost/benefit analysis is to determine the economic feasibility of automating catalog production and maintenance. The analysis also provides the Virginia Beach Department of Public Libraries with a comparison of alternative approaches in an effort to attain its objectives. Further consideration is given to the compatability of an automated catalog system with eventual automation of library routines and procedures related to the acquisitions, circulation, and control of library materials.

GOALS OF THE LIBRARY DEPARTMENT

The study was conducted by the Virginia Beach Department of Public Libraries with the assistance of the Data Processing Department of Virginia Beach. The Library Department's goals for automation are:

1. conversion of the public catalog from a printed card storage/retrieval system to a magnetic tape/disk storage/retrieval system with public access through computer output microform (COM) reader.

2. automation of library circulation and control routines and procedures.

3. leadership and development of a regional library/information network.

ROLE OF THE DATA PROCESSING DEPARTMENT

The Data Processing Department's role was to assist in conducting a cost benefit analysis which included:

1. a study of library manual routines, specifically card catalog production and maintenance, to compare the advantages, disadvantages, and costs of an automated catalog.

2. establishment of a phased approach to insure the compatability of the first phase with succeeding phases.

3. an investigation of possible methods to accomplish the first phase.

4. an analysis of the first phase's impact on the City's data processing resources.

MAJOR COST SECTION OF THE STUDY

Two areas for which cost estimates were developed are:

1. determination of the costs of the present system.
2. determination of the costs of the proposed system.

MANAGEMENT SUMMARY

Management's primary function is to make decisions which determine the future course of action for an organization. The implication of a decision is that alternatives exist. The selection of one of these alternatives implies that management has judged equally all existing alternatives on an unbiased basis. The selection analysis, conducted jointly by the Virginia Beach Department of Public Libraries and the Virginia Beach Data Processing Department, consisted of:

1. a review of the procedures and methods currently used to produce and maintain a card catalog system.

2. an examination of possible alternatives to the present operation.

3. a study of feasible alternatives.

4. a projection of associated costs for each alternative.

During the study, three unique approaches were identified: a COM catalog produced by an outside source; a COM catalog produced within the city; retention of the current system, a policy of no action.

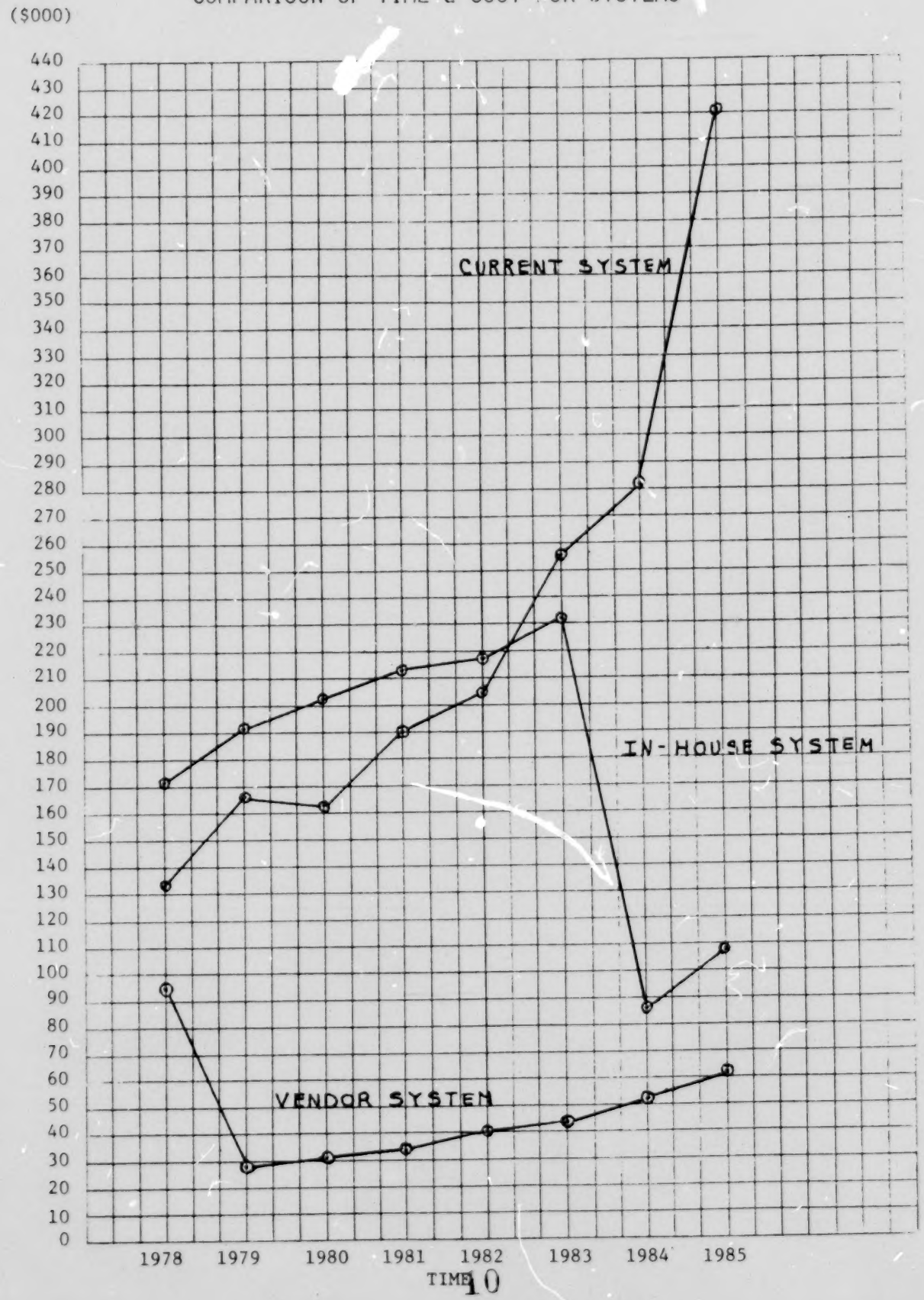
The first approach, a COM catalog from an outside source would provide the Library Department with the lowest overall cost per year. Table A demonstrates the relative comparisons on a yearly basis. First year operating costs include the cost of converting the present system to a COM system, a one-time high of $95,168.03. The radical drop for the next year reflects the cost of operating such a system followed by relatively modest yearly increases. The inclusion of new branches does not impact the cost curve as radically as with any other alternative approach as these branches require only additional film and readers. By 1985, operating costs would be slightly higher ($60,735.24) than the original first year cost ($95,168.03).

The City's Data Processing Department has the technology to produce and maintain an automated catalog system identical to that of the vendor. The basic difference between the two systems is development cost. The vendor is at an advantage as development costs can be shared by many users. The in-house system would have this cost allocated to only one user. Since development would last 5.5 years, the current system would have to remain in operation during this period. These combined costs total over $173,000.00 for the first year and $218,999.75 by 1982. Conversion costs are combined with operating costs in 1983 to raise the cost to a high of $231,925.99. This one year conversion cost compares unfavorably with the vendor conversion charge of $60,735.24. After this point, costs drop sharply to $87,000 for normal operation. If the life of the in-house system is defined as seven years, the result is 5.5 years to develop a program for a system which would only last 1.5 years.

If current figures for the present system are projected through 1985 (Table A), first year comparison indicates a cost of $134,400.33. This cost is almost double that of a vendor-supplied system which would be operable that same year. The in-house developed system is under development at roughly 2.5 times the cost of a vendor system and would not become operational until the sixth year. Studies for 1977 reveal a cost of $129,365.81 to operate the present card catalog system. Assuming no action is taken to change the card catalog system, projected costs for 1978 show an increase to $134,400.33 and a rapid climb to a 1985 total of $422,359.37, a 306% increase in only eight years.

TABLE A

COMPARISON OF TIME & COST FOR SYSTEMS



FORMS OF LIBRARY CATALOGS

In order to make their collections readily accessible to readers, from early times librarians have prepared catalogs of their holdings and organized books and other materials in classified arrangements. The earliest catalogs were in manuscript form. The first book catalog used in the United States was published by Harvard University in 1793. With the sale of printed cards by the Library of Congress in 1902, card catalogs became the standard form of access to a library's collection. Until modern technological advancements, this form has proved sufficient for most libraries. Recently many libraries have utilized automated approaches to their catalogs. Brief descriptions of these forms of catalogs (card, book, COM, and on-line) follow:

CARD CATALOG

1. The catalog can be updated constantly as entries are on moveable units.
   a. New entries may be interfiled among the old at any time.
   b. Cards can be removed upon discarding materials.
   c. The catalog can keep pace with bibliographic changes.
2. The catalog has a central location in the library.
3. Since the file is contained in several drawers, access is not restricted to one user.
4. Entries can be as detailed as required.

BOOK CATALOG

1. It is portable and can be located and consulted in any location.
2. Multiple copies can be made and distributed, but at a high cost.
3. More than one entry can be consulted at a time.
4. It occupies less space than a card catalog.
5. Computer arrangement of entries minimizes error and reduces filing errors.
6. Updates are produced in supplementary volumes.

COM (COMPUTER OUTPUT MICROFORM) CATALOG

1. It is computer arranged on microform.
2. The reader is portable and can be located and consulted in many locations.
3. Duplicate copies can be made and distributed inexpensively.
4. Multiple entries can be viewed quickly.
5. Space requirements are less than those for a card catalog.
6. Updates can be achieved easily by computer and automatically cumulated.
7. Entries can be as detailed as required.

ON-LINE CATALOG

1. Total data base records are available via search capabilities.
2. Instant updating is possible.
3. Enables access to other networks; e.g., OCLC, SOLINET
4. The terminal is portable and can be located and consulted in many locations.

The Automation Task Force of the Virginia Beach Department of Public Libraries has studied these forms. At this time, an on-line catalog is not feasible as there are no turn-key systems available commercially. The book catalog is also infeasible. Libraries using book catalogs generally print one major catalog with periodic supplements and updates. The cumulation/supplement pattern is not only unworkable for the user but also costly to print. The Task Force learned that the book catalog of the Fairfax County (Virginia) Library System cost $200,000 per year to produce. Conversion to a COM catalog system reduced this annual cost to $36,000. The two remaining catalog forms, card and COM, will be evaluated in this cost/benefit analysis.

DESCRIPTION OF PRESENT SYSTEM

At present each existing card catalog is incomplete. The catalogs in each branch show only the holdings of the branch from its date of opening (Virginia Beach 5/59, Windsor Woods 5/66, Bayside 9/67, and Kempsville 4/69) to the inception of the union card catalog in the Fall of 1970. After 1970 the original four branch catalogs are fairly complete records of library system holdings, but with some inaccuracies due to differences in filing and human error. However, the Great Neck catalog includes only titles added to the system since February 1976 due to the prohibitive cost of duplicating the existing card catalog.

The current catalog system is maintained manually by the staff at each branch and the Processing Center. Tasks involved in producing and maintaining the catalog are catalog card production and filing, and the generation of correction sheets which necessitate changes in the catalog. All catalog records are produced and distributed by the Processing Center and acted upon by the branches.

CATALOG PRODUCTION

Upon receipt of new library materials, the materials are sorted into: (1) those with cataloging copy already available, (2) those which need original cataloging, and (3) those which are added copies of titles already in the library system. For categories 1 and 2, librarians examine each title, determine the cataloging record, and assign classification number. An instruction sheet is made for each title. Library materials in category 3 have the order slip pulled and arranged in shelf list order. When the shelf list cards are pulled, the copy numbering and union symbols are added to the cataloging record. A list of union symbols to be added to the catalog card sets is compiled and sent to the branch and division libraries.

After each cataloged book is checked against its instruction sheet, a stencil is typed and proofed. Catalog cards are then produced on a minigraph machine. The exact number of cards and the instruction sheet are inserted into the book. A shelf list card is prepared for each title and the appropriate headings typed at the top of the catalog cards. The typing on each catalog card is edited and the shelf list cards are separated from the card sets. Catalog cards are placed inside the book pocket. A separate catalog card set is sent to all branches and divisions not receiving the title for their collections. The shelf list cards are arranged and filed in the shelf list. The shelf list filing is revised.

Corrections to cataloging records are prepared by the Processing Center. These are generated by the branch and division libraries or by the Processing Center. Corrections involve classification, entry, subject headings, copy numbers and holdings, and discarded earlier editions.

The proper correction is determined and various correction sheets are prepared. Corrections often involve changes to the shelf list card record and/or catalog card set. Correction sheets are copied and sent to branch and division libraries.

CATALOG MAINTENANCE

Recently cataloged titles are received weekly by the library branch/division. A staff member removes the catalog card set from each volume. Branch/division reference shelf list cards are separated and filed. The books are stamped, reserve requests filled, and shelved. The catalog card sets for titles received and for those titles received by other branches and divisions are checked for completeness and accuracy and revised if needed. Card sets are separated into author/title, subject, and juvenile fiction categories and alphabetized according to library filing rules. Cards are interfiled into the main card catalog and then revised for accuracy. If any problems are found, they are noted for further action. These problems are reviewed and those needing correction are sent to the Processing Center.

Correction sheets listing revisions to the card catalog and/or book collection are received by the branch/division from the Processing Center. Sheets listing union symbols additions and deletions are assigned to all staff members. To delete or add a union symbol, the catalog card must be located and the appropriate symbols changed. If the last symbol on the card set is deleted, the card set is removed from the catalog. Missing cards or card sets are noted on the correction sheet.

If the correction sheet lists changes in classification, entry, or subject heading, the card set must be pulled, the appropriate changes typed, and the cards refiled. In addition, the book must be located and the appropriate changes made to the spine label, book card and book pocket. The book is then returned to the shelf.

To discard a book, the card set is removed from the catalog, the book located and removed from the shelf. All completed correction sheets and cards removed from the catalog are revised for accuracy. Missing cards indicated on worksheets are typed and filed.

REQUIREMENTS OF NEW SYSTEM

The Virginia Beach Department of Public Libraries has a book collection of 260,000 volumes spread over nine locations. Projected growth by 1985 includes seven additional locations. Presently there are approximately 2.5 million catalog cards within the Virginia Beach Public Library System. Catalog maintenance by 1985 will include 4.5 million catalog cards. In order to accomodate the collection in 1985, eighty-eight additional catalog card units must be purchased. Expansion of the catalog involves numerous shifts of the catalog cards within branches. This process is time consuming and labor intensive.

An automated system to replace the current manual system must meet the following requirements:

1. capability to provide a complete catalog at all present and future locations of the Virginia Beach Department of Public Libraries.

2. elimination of filing of catalog cards and other labor intensive processes.

3. adaptability to new technologies.

4. use of universally accepted cataloging codes.

5. adaptability to particular cataloging needs of the Virginia Beach Department of Public Libraries.

    a. bibliographic control.

    b. subject authority control.

    c. name authority control.

    d. specialized catalogs.

6. adaptability of the data base for other library purposes, e.g., circulation control.

7. cost effectiveness.

8. capability for library networking.

9. accessibility to national data bases.

ASSESSMENT OF IMPACT AND COST

INTRODUCTION TO METHODOLOGIES USES

A cost/benefit analysis insures that the user receives, in terms of time and money, the best possible return for the investment. Evaluating a system's efficiency using cost as a measure is a cost minimization problem. An inventory cost minimization problem represents an economic exchange between the cost elements of the possible alternatives.

The cost of maintaining any system is an aggregate value composed of many individual cost elements. In an effort to make analyses equal, identical cost elements were used to compare each alternative. They were personnel, equipment, space, support services, supplies, and overhead. When necessary additional cost elements were included to reflect accurately the total cost.

Without thorough knowledge of the present system, it is impossible to ascertain the proper direction which development should take. A variation of the PERT (Program Evaluation and Review Technique) method provides a convenient method of depicting work flow under both present and proposed conditions. Examination of these charts reveals not only all tasks performed, but also those tasks most essential to the operation.

The next step involved extensive time studies on all affected operations. Times were uniformly recorded and expanded by the appropriate wage scale for each job classification, resulting in an accurate sample of rates per classification. Combining the results of the six cost elements produced a total which accurately reflected the cost to maintain, develop, and operate any system.

A second area of equal importance is benefits. Benefits include tangible factors such as reduced operating expenses, as well as intangible factors such as improved patron service. The benefits which the new system will provide are much more elusive and difficult to determine than are the costs.

DETERMINATION OF PRESENT SYSTEM COSTS

The present system operating cost summary indicates an aggregate cost of $129,365.81 for 1977. This total is comprised of the six cost elements: personnel, equipment, space, support services, supplies, and overhead. Time studies were conducted both at the Library's Processing Center and at a representative branch library. Tasks were divided into two groups: (1) those dealing with current card catalog production and/or maintenance; (2) those dealing with functions not related to the card system.

Each task involved with the production and maintenance of the card system was timed, yielding a cost for every function performed. These figures comprise the $71,792.21 total personnel cost. Similarly, the remaining five categories were measured in relationship to the card system. Each cost element is an accurate reflection of the expense involved in continued operation of the present card catalog system.

Projecting these costs through 1985, assuming an average 7% increase per year, reveals an enormous expenditure totaling $422,286.05. Table D indicates the varying effects such functions as catalog shifts, new equipment, and new branches have upon the system. Expansion of the catalog at each branch consists not only of the additional cost of future catalog units, but also the complicated, time consuming task of expanding, drawer by drawer, the entire contents of each catalog. By 1985 this expansion process will approximately triple its present cost. New catalog units are added each year for catalog expansion, as well as the operation of each new branch. This cost element increases at five times the original cost by 1985. Recent purchases of 120-drawer units reveal costs of $2,464 per unit. Projecting this figure to 1985, assuming a 7% yearly increase, yields a $4,235.04 per unit cost. With an estimated requirement of thirty-nine additional units that year, the cash outlay will be $165,166.56; a significantly higher cost than that of the entire cataloging production and maintenance effort for 1977.

In addition to the purchase of the catalog units, catalog cards must be provided. By 1982, the proposed Columbus Loop Branch Library will require an additional $2,262.20 to purchase catalog cards. As each additional branch opens, its catalog will reflect only current system holdings. No access will be provided to the total retrospective system collection as the duplication of a complete, up-to-date catalog is impossible. Presently, the most complete card catalog contains approximately 450,000 cards. By 1985 this figure will double requiring a proportional increase in space, staff, equipment, and overhead. At this rate the current 2,250,000 cards in the system will total 4,431,310.

TABLE B

PROJECTED COSTS OF CURRENT SYSTEM

	1978	1979	1980	1981	1982	1983	1984	1985
PERSONNEL	$ 76,817.67	$ 90,453.50	$ 97,948.54	$103,823.09	$100,692.29	$119,068.50	$115,282.60	$146,909.97
EQUIPMENT		14,109.90		16,154.45	27,656.40	51,786.70	71,243.64	165,166.56
SPACE	3,220.31	3,220.31	3,220.31	3,220.31	3,540.71	3,700.91	4,021.31	4,245.59
SUPPORT SERVICES	2,935.00	3,140.45	3,360.28	3,595.50	3,847.19	4,116.49	4,404.64	4,712.97
SUPPLIES	5,336.75	5,810.54	6,310.78	6,837.42	9,652.66	12,710.31	18,488.18	27,312.85
OVERHEAD	46,090.60	49,316.94	52,769.12	56,462.96	60,415.37	64,644.45	69,169.56	74,011.43
TOTAL	$134,400.33	$166,051.64	$163,609.03	$190,093.73	$205,804.62	$256,027.36	$282,609.93	$422,359.37

TABLE C

OPERATING COST SUMMARY

PRESENT SYSTEM

COST CATEGORY	MONTHLY	ANNUAL
1. Personnel	$ 5,982.69	$ 71,792.21
2. Equipment	$ 287.80	$ 3,453.58
3. Space	$ 268.36	$ 3,220.31
4. Support Services	$ 244.56	$ 2,935.00
5. Supplies	$ 407.45	$ 4,889.38
6. Overhead	$ 3,589.61	$ 43,075.33
TOTALS	$ 10,780.47	$ 129,365.81

Individual calculations in Appendix

TABLE D

IMPACT OF PROJECTED GROWTH ON CURRENT SYSTEM'S OPERATING COSTS

	1978	1979	1980	1981	1982	1983	1984	1985
NEW BRANCHES					Columbus Loop	Princess Anne	Kings Grant Indian Lakes	Harpers Rd. Blackwater Pungo
CATALOG SHIFT		X		X		X		X
COST FOR CATALOG SHIFT		$8,258.60		$9,718.15		$11,327.75		$23,557.59
CATALOG UNITS REQUIRED FOR SHIFT		5 - 120 Drawer Units		5 - 120 Drawer Units		6 - 120 Drawer Units		9 - 120 Drawer Units
COST OF UNITS FOR CATALOG SHIFT		$14,109.90		$16,154.45		$22,194.30		$38,115.36
CATALOG UNITS REQUIRED FOR NEW BRANCHES					8 - 120 Drawer Units	8 - 120 Drawer Units	18 - 120 Drawer Units	30 - 120 Drawer Units
COST OF UNITS FOR NEW BRANCHES					$27,656.40	$29,592.40	$71,243.64	$127,051.20
COST OF CARDS FOR NEW BRANCH					$2,262.20	$4,740.40	$9,912.80	$18,104.80
TOTAL CARDS PER BRANCH	491,175	534,780	580,820	629,290	680,190	733,520	789,280	847,474
TOTAL CARDS WITHIN SYSTEM	2,455,875	2,673,900	2,904,100	3,146,450	3,451,850	3,771,829	4,106,389	4,431,310

DETERMINATION OF PROPOSED SYSTEM COSTS

IN-HOUSE SYSTEM

The recognized problems of continued operation of the present system lead logically to the conclusion that an alternative system must be determined. One choice is to develop a computerized microform system utilizing the city's Data Processing Department.

Examination of current services of the Data Processing Department indicates that the type of work desired is technically feasible. The equipment exists, but Data Processing Department personnel would require training in the necessary library skills. The cost summary sheet lists the identical six cost elements as the current system, with the addition of several new elements. Computer time is derived from program estimates as to execution time calculated in billionths of a second. Total execution time is the sum of the times necessary to read each input record, process it, and then write the output record. Mathematical techniques involving optional development times, variances of those times, standard deviations, and statistical analysis were combined to give an accurate estimate for developing an in-house system. The result is an estimated 1373.03 working days or 5.5 calendar years for development.

Development time was divided among appropriate job classifications. A Systems Analyst will be involved from initial planning through conversion and implementation and thus will account for the largest portion of the Data Processing Department's personnel cost. Combined salaries of all positions will cost $160,198.72. The MARC (MAchine Readable Cataloging) data base tapes must be purchased from the Library of Congress. Defensive measures must be taken to protect this investment. Duplicating the data base on "back-up" tapes will insure the necessary protection. The total cost for development, $195,408.72, is amortized over a period of 5.5 years yielding an annual charge of $35,593.57.

With development completed, the current card system must be converted to a COM (Computer-Output-Microform) system. Conversion will require one working year for a total cost of $72,500.40. Based on a 1977 estimate of $950 per unit, the required thirty (30) readers would total $28,500, or a little over one-third the total cost of conversion. Personnel costs include both the Library and Data Processing staffs.

As both development and conversion costs are non-recurring, the last category, operating cost, is the heart of the cost determination. Costs for personnel, computer time, and update tapes are calculated as before. Operating costs are allocated to one of the predetermined cost elements. The in-house cost summary sheet relates the costs by year for our city-developed system.

The first 5.5 years show only development and current operating costs as the present system must be maintained until the new system is operational. In 1983, a cost of $72,500.40 is included to cover the conversion from the old system. Immediately following the conversion, costs will decline rapidly to $87,151.87. From this point on, only operating costs will be incurred.

VENDOR SYSTEM

Operating costs for a COM System are $150,000 per year less expensive than continued operation of the present card system. If the Library Department could eliminate the development costs of an in-house system, a sizable savings would result.

Several companies specialize in library catalog systems. Vendors possess all the expertise, staff, and equipment necessary to convert and operate a COM System. The costs of a typical vendor were examined. Table H shows costs for conversion from a card system and maintenance of a COM catalog system.

The six basic cost elements are supplemented by an additional element, the conversion charge. The vendor has purchased the same data base tapes that the city would need to develop its own system. The difference is that the vendor's cost is distributed among many users, thereby reducing each user's share. The Virginia Beach Department of Public Libraries share, $13,505, is minimal when compared to the $72,500.40 necessary for in-house conversion. Total expenditures for the conversion year equal $95,168.03 including the purchase of thirty (30) COM readers. By the second year of operation, this figure declines to $28,618.84 followed by a gradual rise with the construction of additional branches. Personnel costs for inputting data during the first year of operation are less than $1,100 with slight increases thereafter.

TABLE E

IN-HOUSE COST SUMMARY

	1978	1979	1980	1981	1982	1983	1984	1985
PERSONNEL						$ 48,949.08	$ 6,419.60	$ 6,868.89
EQUIPMENT						5,329.68	7,128.40	22,882.30
SPACE						1,937.68	2,265.20	2,756.48
SUPPORT SERVICES						30,984.00	33,152.87	35,473.58
SUPPLIES						2,064.84	2,209.38	2,364.03
OVERHEAD						29,369.45	3,851.76	4,121.33
COMPUTER TIME						5,197.29	32,124.66	34,493.15
CONVERSION COST						72,500.40		
DEVELOPMENT COST	$ 35,593.57	$ 35,593.57	$ 35,593.57	$ 35,593.57	$ 35,593.57	35,593.57		
CURRENT SYSTEM OPERATING COSTS	137,853.91	155,834.90	167,502.17	178,355.53	183,406.18			
TOTAL	$173,447.48	$191,428.47	$203,095.74	$213,949.10	$218,999.75	$231,925.99	$ 87,151.87	$108,959.76

TABLE F

IN-HOUSE COST SUMMARY

DEVELOPMENT

Data base tapes	$ 26,775.00
Back-up tapes	360.00
Personnel	160,198.72
Computer time	8,020.00
Test tapes	55.00
	$ 195,408.72

CONVERSION

Hardware	$ 28,500.00
Original keying	3,788.80
Full entry keying	5,686.76
Keying corrections	378.88
Editing	291.53
D. P. keying service	28,657.14
Computer time	5,197.29
	$ 72,500.40

OPERATING

Original keying	$ 340.98
Full entry keying	255.72
Keying corrections	227.34
Editing	174.96
D. P. keying service	2,579.10
Computer time	32,124.66
Data base update tapes	3,265.00
	$ 38,967.76

TABLE G

IN-HOUSE DEVELOPMENT TIME

PERSONNEL	DAYS
Analyst	662.400
Analyst/Programmer	292.525
Programmer	418.125
	1373.050 Days or 5.49 *Calendar Years

TASK	DAYS
System Survey	60.00
Data Gathering	52.00
Systems Analysis	115.00
Systems Specifications	107.00
Systems Design - General	140.40
Systems Design - Detailed	60.00
Construction Phase	638.65
System Testing	50.00
Implementation	30.00
Post Evaluation	120.00
	1373.05 Days or 5.49 *Calendar Years

*One Calendar Year = 250 Working Days

TABLE H

ESTIMATED VENDOR'S COST SUMMARY

CONVERSION

Hardware	$ 23,250.00
Original keying	3,788.80
Full entry keying	5,686.76
Keying corrections	378.88
Editing	291.53
Analyst time	10,240.00
Basic conversion charge	13,505.00
	$ 57,140.97

OPERATING

Basic operating charge	$ 20,307.69
Original keying	340.98
Full entry keying	255.72
Keying corrections	227.34
Editing	174.96
	$ 21,306.69

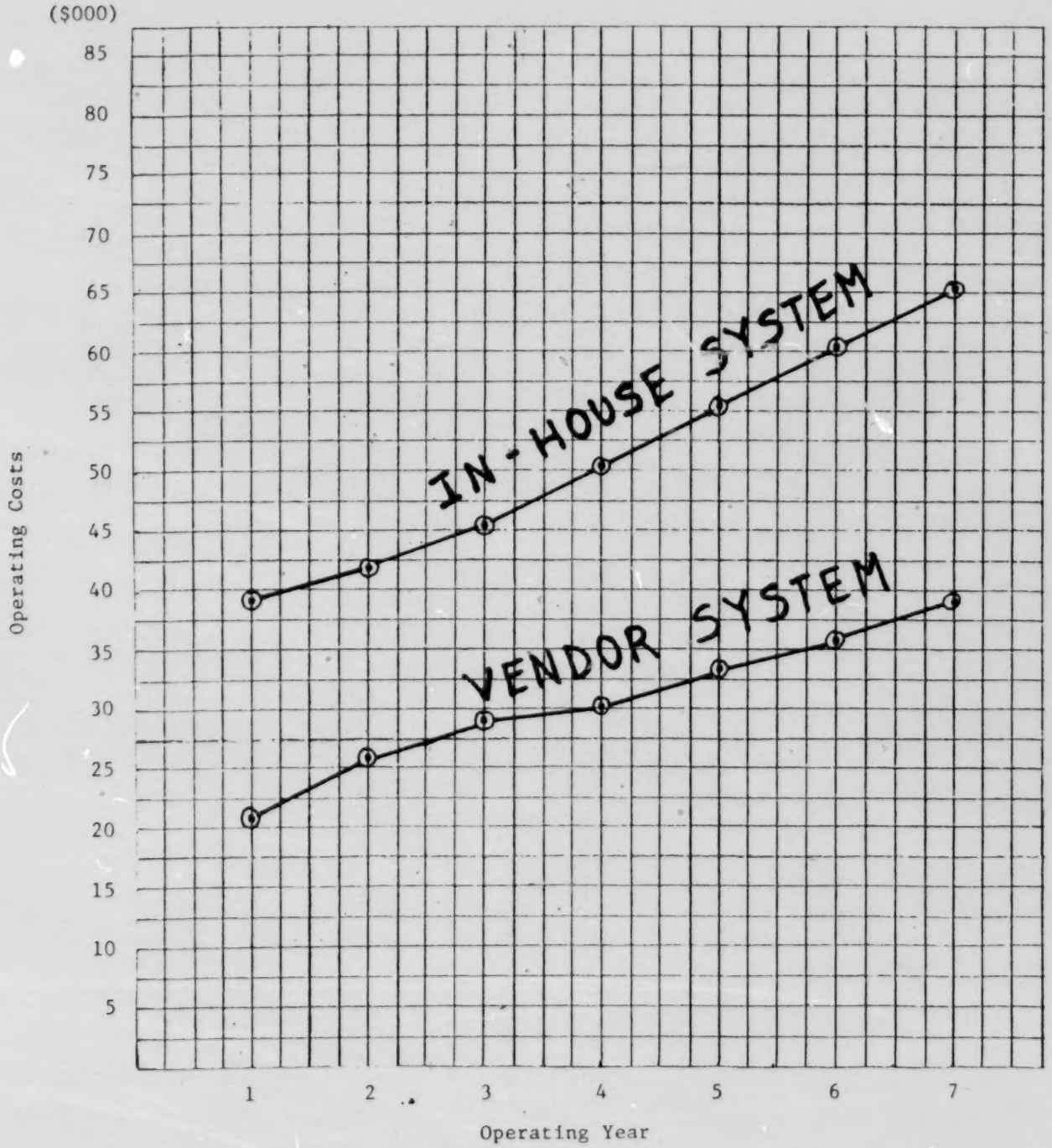
TABLE I

ESTIMATED VENDOR'S COST SUMMARY

	1978	1979	1980	1981	1982	1983	1984	1985
CONVERSION COST	$ 13,505.00							
PERSONNEL	20,385.97	$ 1,122.43	$ 1,201.00	$ 1,285.07	$ 1,375.03	$ 1,471.28	$ 1,574.27	$ 1,684.47
EQUIPMENT	23,250.00				4,747.10	5,709.40	10,869.80	17,446.00
SPACE	2,232.12	1,610.16	1,610.16	1,610.16	1,773.92	1,937.68	2,265.20	2,756.48
SUPPORT SERVICES	22,091.16	23,637.54	25,292.17	27,062.62	28,957.00	30,984.00	33,152.87	35,473.58
SUPPLIES	1,472.20	1,575.25	1,685.52	1,803.51	1,929.75	2,064.84	2,209.38	2,364.03
OVERHEAD	12,231.58	673.46	720.60	771.04	825.02	882.77	944.56	1,010.68
TOTAL	$ 95,168.03	$ 28,618.84	$ 30,509.45	$ 32,532.40	$ 39,607.82	$ 43,049.97	$ 51,016.08	$ 60,735.24

TABLE J

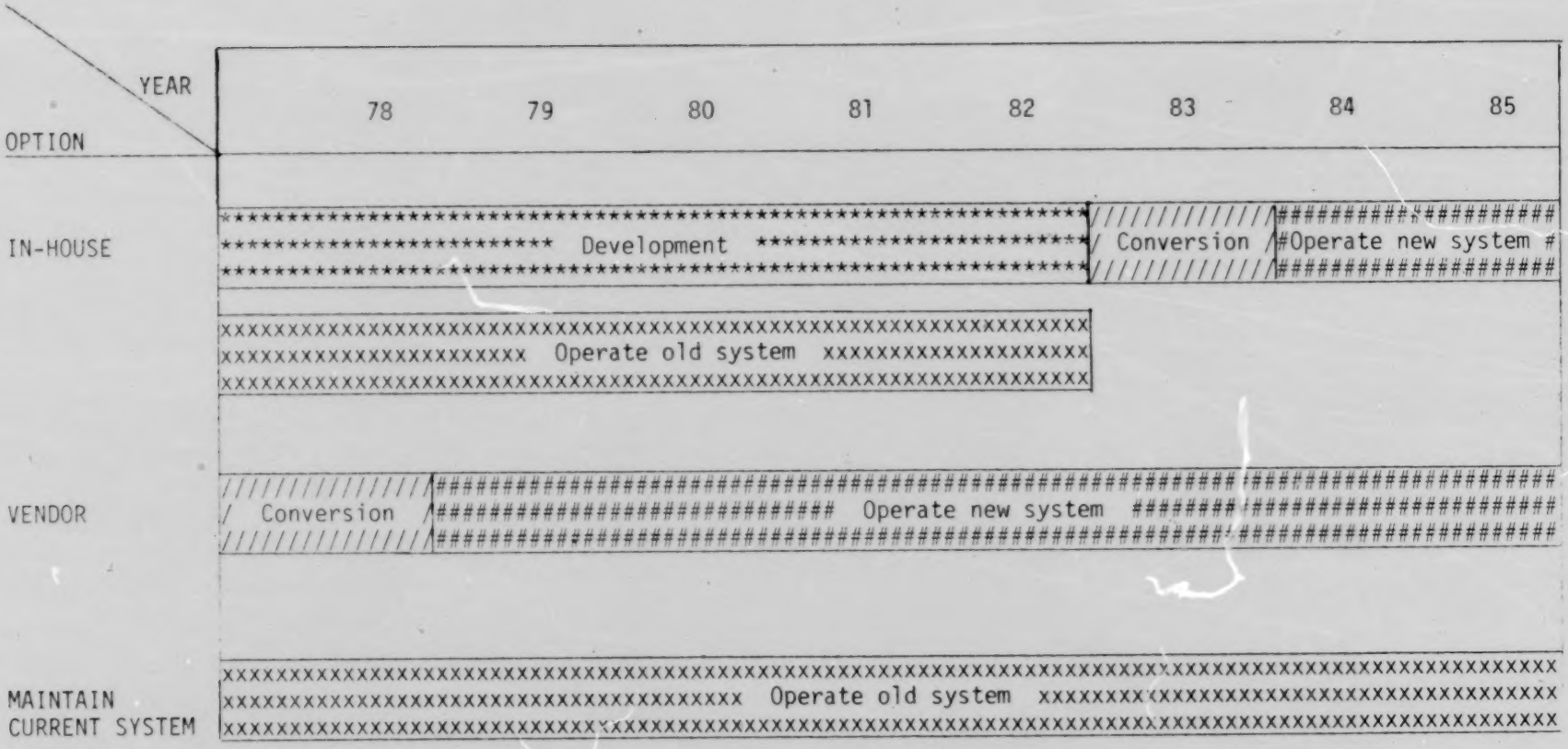
PROJECTED OPERATING* COSTS OF ALTERNATIVE MICROFORM SYSTEMS
(BASED ON 100,000 TITLES)



* Operating costs do not include development and conversion costs

TABLE K

SYSTEM TIMETABLE



ASSESSMENT OF BENEFITS

The Virginia Beach Department of Public Libraries has the philosophy of equal access to service for all users at all locations. This goal is unachievable if the present card catalog system is to be maintained. An automated catalog system is the most cost effective approach to stated requirements. The implementation of an automated catalog system, specifically COM, will result in benefits to the Virginia Beach Public Library System.

The Great Neck Branch Library's card catalog represents materials acquired after February 1976. Since 150,000 retrospective volumes owned by the system are inaccessible to Great Neck users, the staff must contact other branches to determine availability of a desired title. This inter-branch contact totals $239.40 per year in personnel costs, an equivalent of 9.5 working days. This figure reflects costs for the Great Neck Branch alone and does not include costs in those branches being contacted. This cost will rise proportionately with the provision of a card catalog in each new location.

Approximately fifty (50) staff members file and revise the card catalog in the five branches. To effect this process requires 11,416.6 working hours and a yearly personnel cost of $48,616.85. As catalog maintenance will no longer be required with a COM catalog system, personnel presently assigned to this tedious and labor intensive task will be reassigned to duties in new and increased public services. Physical destruction and deterioration of the card catalog and its records occur through intentional sabotage, aging, and heavy use. This damage will be minimized with a COM catalog system as the microfilm is protected by the locked COM reader. In addition, with all corrections and revisions handled solely by the Processing Center, cataloging records will be consistent and accurate.

The Virginia Beach Public Library System has approximately 90,000 titles in its catalog. Conversion to an automated catalog system is recommended for libraries with holdings of under 100,000 titles as cataloging records for 80% of these holdings already appear in machine readable form. Time presently spent locating cataloging records in printed bibliographic tools will be eliminated. The COM catalog system will allow compliance with universal cataloging codes and standards and future changes can be easily adopted. Compatibility with new technologies will enable a COM catalog system to interface with networks such as the regional automated circulation system being developed with LSCA funds by the Tidewater area libraries and the Virginia State Library.

Projected growth of the library's acquisitions and facilities necessitates continual expansion of the card catalog. By 1985 equipment costs will have increased by 1,171%, space requirements by 76%, and supply costs by 195%.

With budget restrictions and present overcrowded conditions at many branches, such increases are not feasible. However, a COM catalog system would allow for future expansion and at least five complete copies of the catalog at each branch for improved user access. By 1985 a COM catalog would save 69% of the projected cost to maintain the current system ($422,359.37). The total COM catalog system cost as supplied by a vendor would be $60,735.24.

It has been demonstrated that a COM catalog system will provide all present and projected branches with identical, complete, and accurate catalogs. Currently several divisions within the library system have no direct access to the card catalog.

At present the Reference Division, housed at the Bayside Branch Library, has access to that branch's card catalog. However in 1982 the division will move to the proposed Columbus Loop site. To provide service, the Reference Division requires an accurate and complete catalog of the system's holdings. Only a COM catalog system can fulfill this requirement.

The Municipal Reference collection, located in the city's municipal complex, serves all city employees. This reference unit maintains a catalog of its unique holdings and relies upon the Reference Division for additional materials. The provision of a COM reader at the Municipal Reference Library would enable all city employees to have immediate access to the full range of materials available in the Virginia Beach Public Library System.

After the Law Library collection is cataloged during FY 1978, general library users will have access to the Law Library collection. Only with a COM catalog system would users of the Law Library have access to the complete Virginia Beach Public Library System catalog.

The bookmobile unit, operated by the Extension Services Division, serves twenty-six weekly stops. At these stops the user has access only to a rotating collection of 3,000 volumes. Requests for additional materials must be checked against a branch card catalog. This checking takes 89.2 working hours per year for a personnel cost of $293.88. In addition, the user must wait up to one week for confirmation of the availability of requested materials. With a COM catalog reader located on the bookmobile, the user will have immediate access to the entire system collection.

The Processing Center presently relies upon the Great Neck Branch Library card catalog. (The problems experienced in using this branch's catalog have been previously described.) In 1982 this division will move to the proposed Columbus Loop site. In order to avoid duplication and to catalog new materials in a consistent manner, it is essential to refer to a complete and accurate catalog. The Processing Center is unable to insure this accuracy currently and will be less able to do so in a new location unless the COM catalog system is adopted.

The Special Services Division maintains its own catalog for large print materials and has access to system holdings through the Bayside Branch Library catalog. Crowded conditions within the division will necessitate its eventual relocation. Continued immediate access to system holdings can be effected only through a COM catalog system. In addition, the COM

reader would provide access to the handicapped not only in the Special Services Division but also at all locations.

The Virginia Beach Public Library System not only seeks to serve users through its branches and divisions, but also seeks to serve potential users at non-traditional locations. Although the library in the Virginia Beach Correctional Center is not an official division of the Virginia Beach Public Library System, interlibrary loan service is provided. The librarian at the Center spends eighteen (18) working hours per year ($114.24) checking requests against a branch card catalog. The purchase of a COM reader and the Virginia Beach Public Library System catalog would provide on-site access to system resources. Other agencies such as the Social Services Department, the public school system, and the Chamber of Commerce may also wish to purchase COM readers and the Virginia Beach Public Library System catalog. Other public library systems could benefit by purchasing the Virginia Beach Public Library System catalog as the catalog would provide a quick and efficient tool for interlibrary loan.

Specialized catalogs are currently produced by the Virginia Beach Department of Public Libraries; e.g., large print materials, genealogical tools, and craft resources. An option provided by a COM vendor would be spin-off catalogs from the data base. Ease of compilation would allow more extensive distribution of specialized listings, resulting in increased awareness of and access to Virginia Beach Public Library System resources.

TABLE L

COST AND TIME SPENT BY LOCATIONS WITHOUT UNION CATALOGS

EXTENSION SERVICES: AUTHOR/TITLE RESERVES

#1 JOB TITLE	#2 MINUTES/MONTH	#3 RATE/MINUTE	#4 COST (#2 x #3)
Page	13	$ .0450	$ .59
Library Assistant Trainee	128	$ .0492	$ 6.30
Library Assistant I	73	$ .0565	$ 4.12
Library Assistant Supervisor	15	$ .0777	$ 1.17
TOTAL	229 mins. or 3 hrs. 40 mins.		$ 12.18

EXTENSION SERVICES: SUBJECT RESERVES

#1 JOB TITLE	#2 MINUTES/MONTH	#3 RATE/MINUTE	#4 COST (#2 x #3)
Library Assistant Trainee	140	$ .0492	$ 6.89
Library Assistant I	27	$ .0565	$ 1.53
Library Assistant Supervisor	50	$ .0777	$ 3.89
TOTAL	217 mins. or 3 hrs. 37 mins.		$ 12.31

GREAT NECK: CALLING OTHER LOCATIONS

#1 JOB TITLE	#2 MINUTES/MONTH	#3 RATE/MINUTE	#4 COST (#2 x #3)
Page	36	$ .0450	$ 1.62
Library Assistant Trainee	27	$ .0492	$ 1.33
Library Assistant I	87	$ .0565	$ 4.92
Library Assistant II	118	$ .0648	$ 7.65
Library Assistant Supervisor	57	$ .0777	$ 4.43
TOTAL	325 mins. or 5 hrs. 25 mins		$ 19.95

JAIL LIBRARY: CHECK CATALOG

#1 JOB TITLE	#2 MINUTES/MONTH	#3 RATE/MINUTE	#4 COST (#2 x #3)
Librarian I	90	$ .1058	$ 9.52

TABLE M

PROCESSING CENTER PRESENT SYSTEM

CORRECTIONS

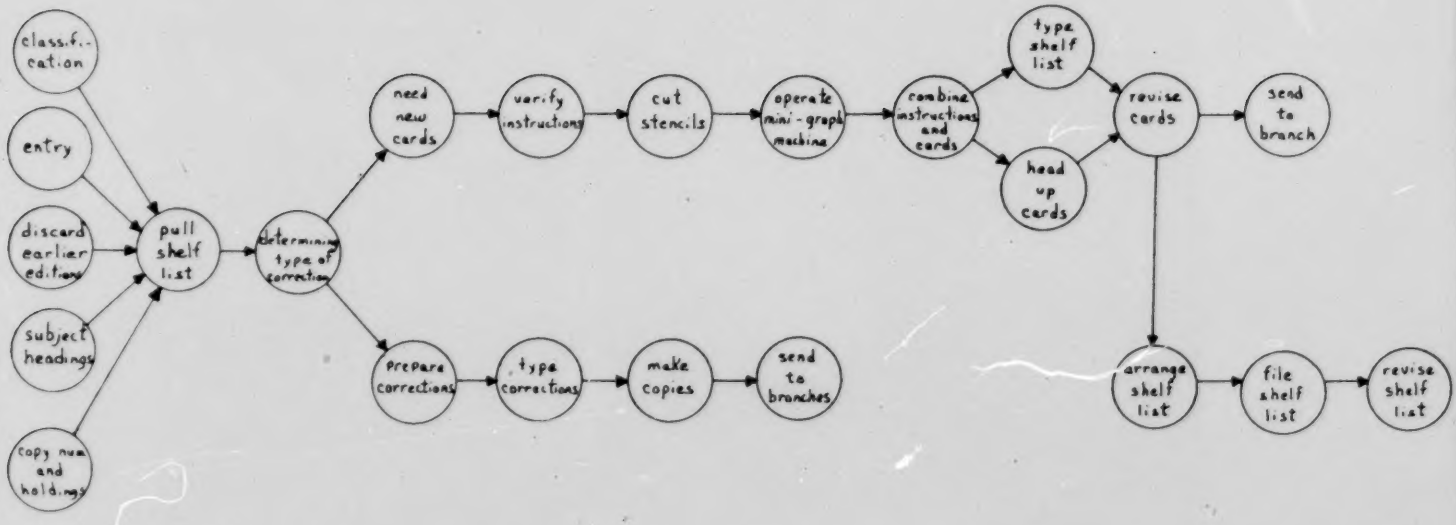


TABLE N

PROCESSING CENTER COM SYSTEM CORRECTIONS

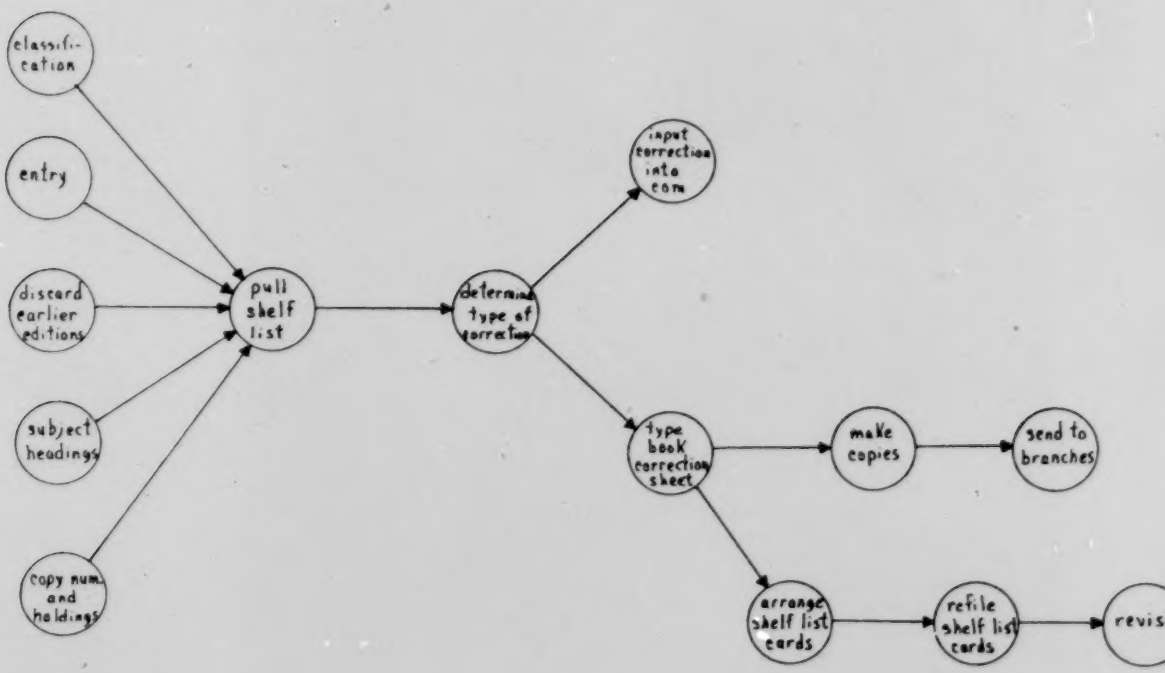


TABLE 0

BRANCH PRESENT SYSTEM CORRECTIONS

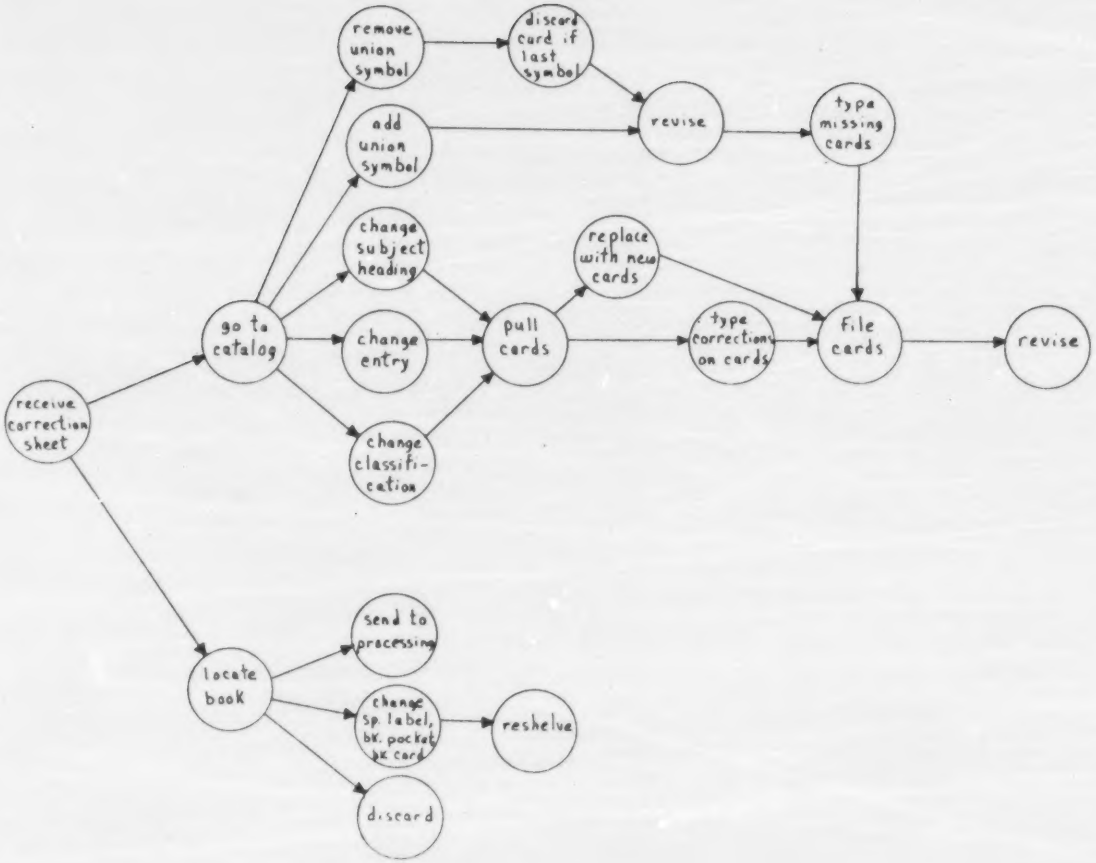


TABLE P

BRANCH COM SYSTEM

CORRECTIONS

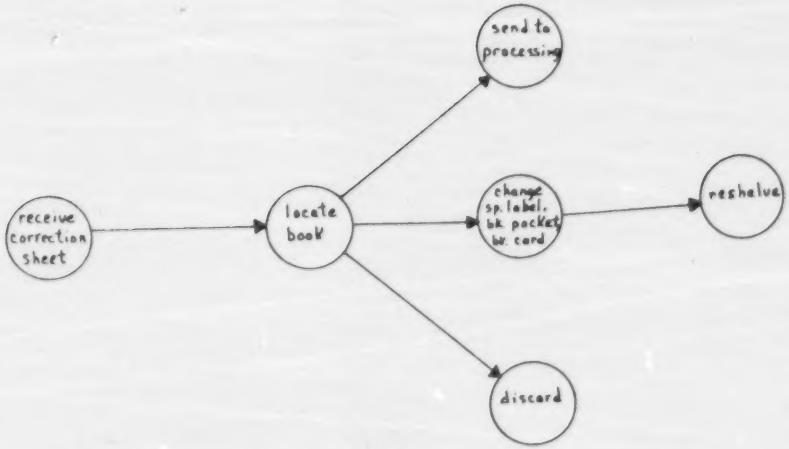


TABLE Q

PROCESSING CENTER PRESENT SYSTEM

CATALOG PRODUCTION

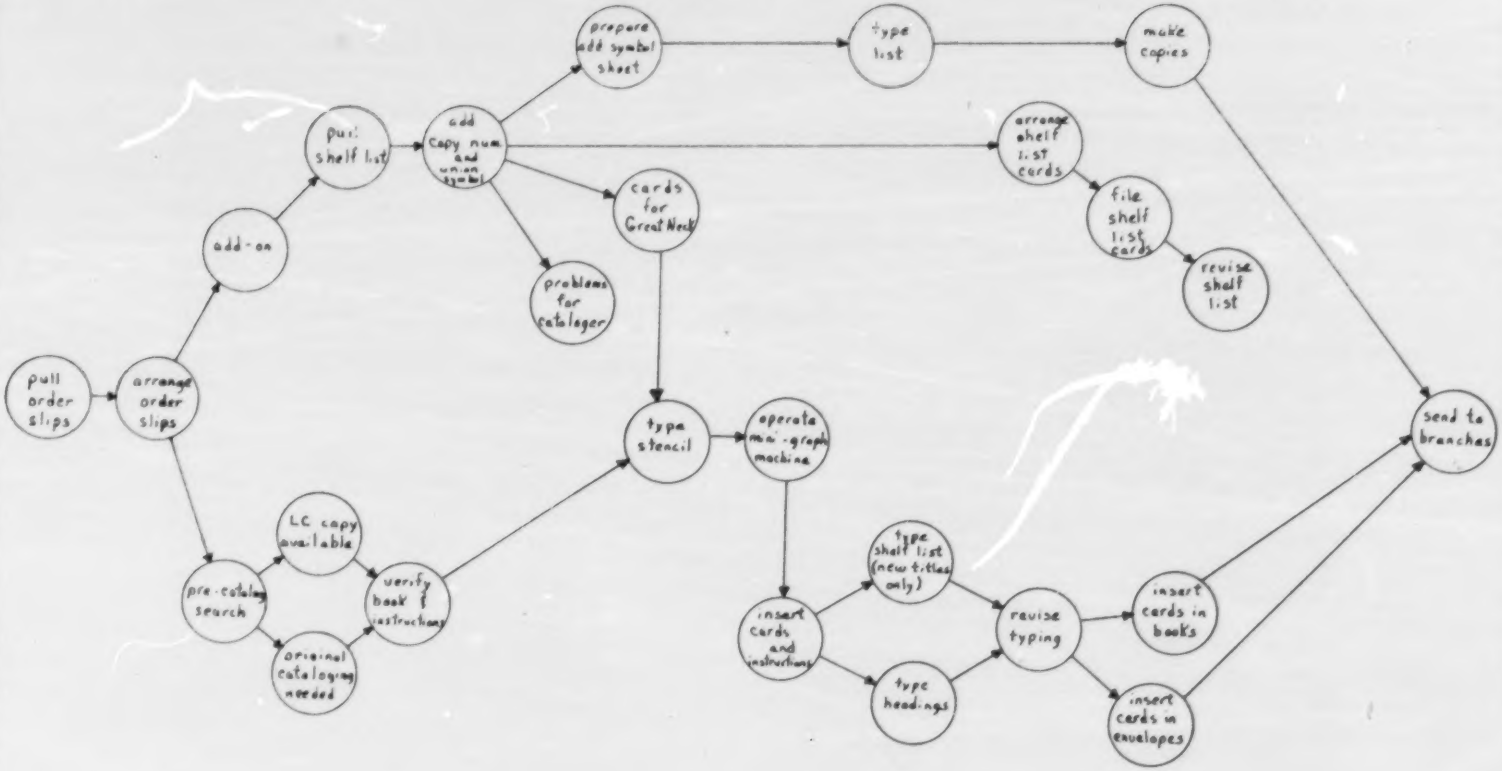


TABLE R

PROCESSING CENTER COM SYSTEM

CATALOG PRODUCTION

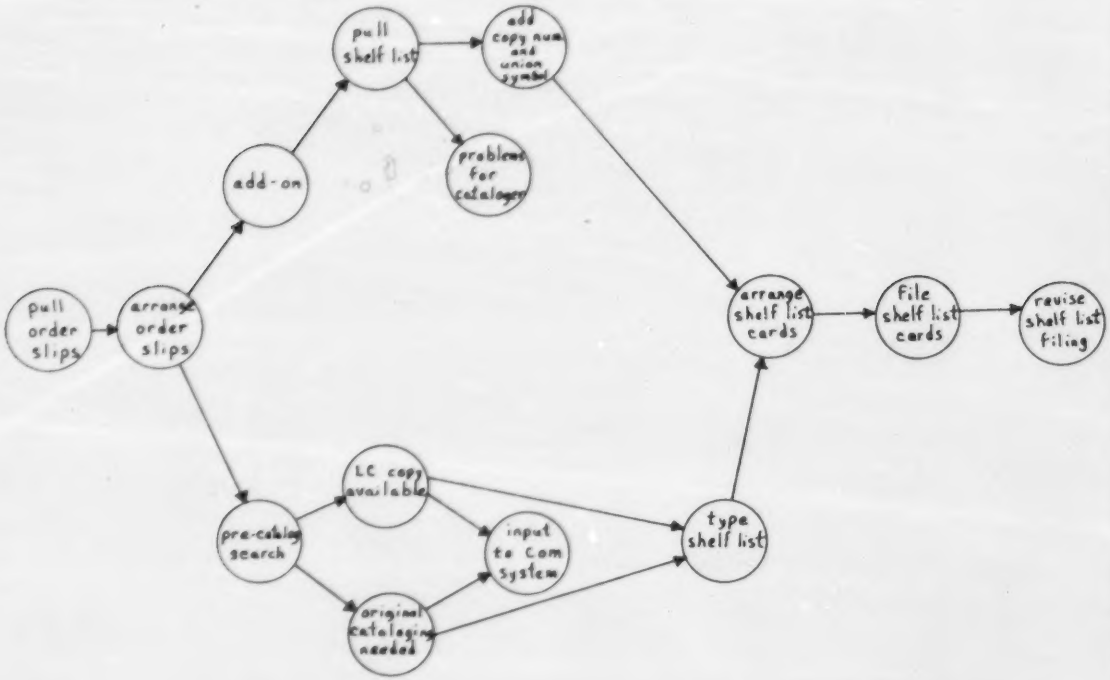


TABLE S

BRANCH PRESENT SYSTEM

CATALOG MAINTENANCE

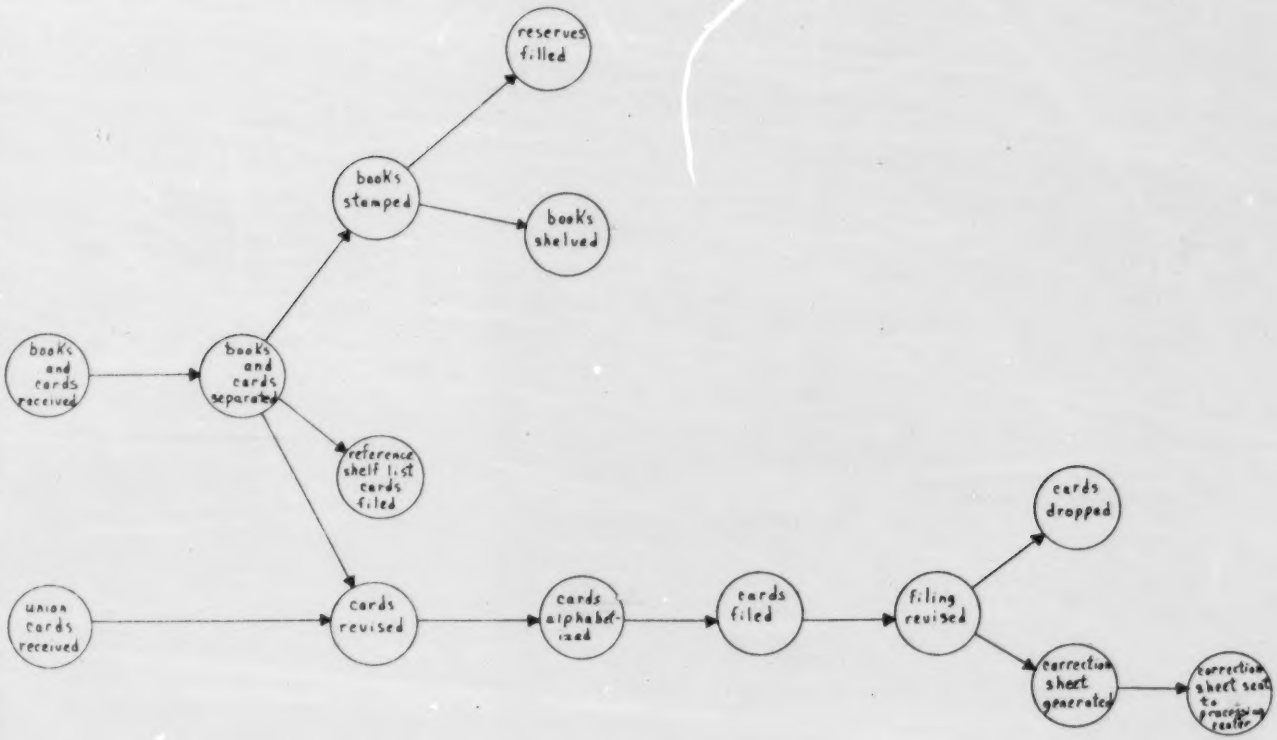


TABLE T

BRANCH COM SYSTEM
CATALOG MAINTENANCE

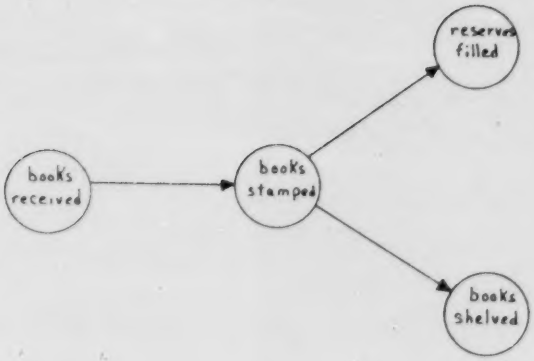
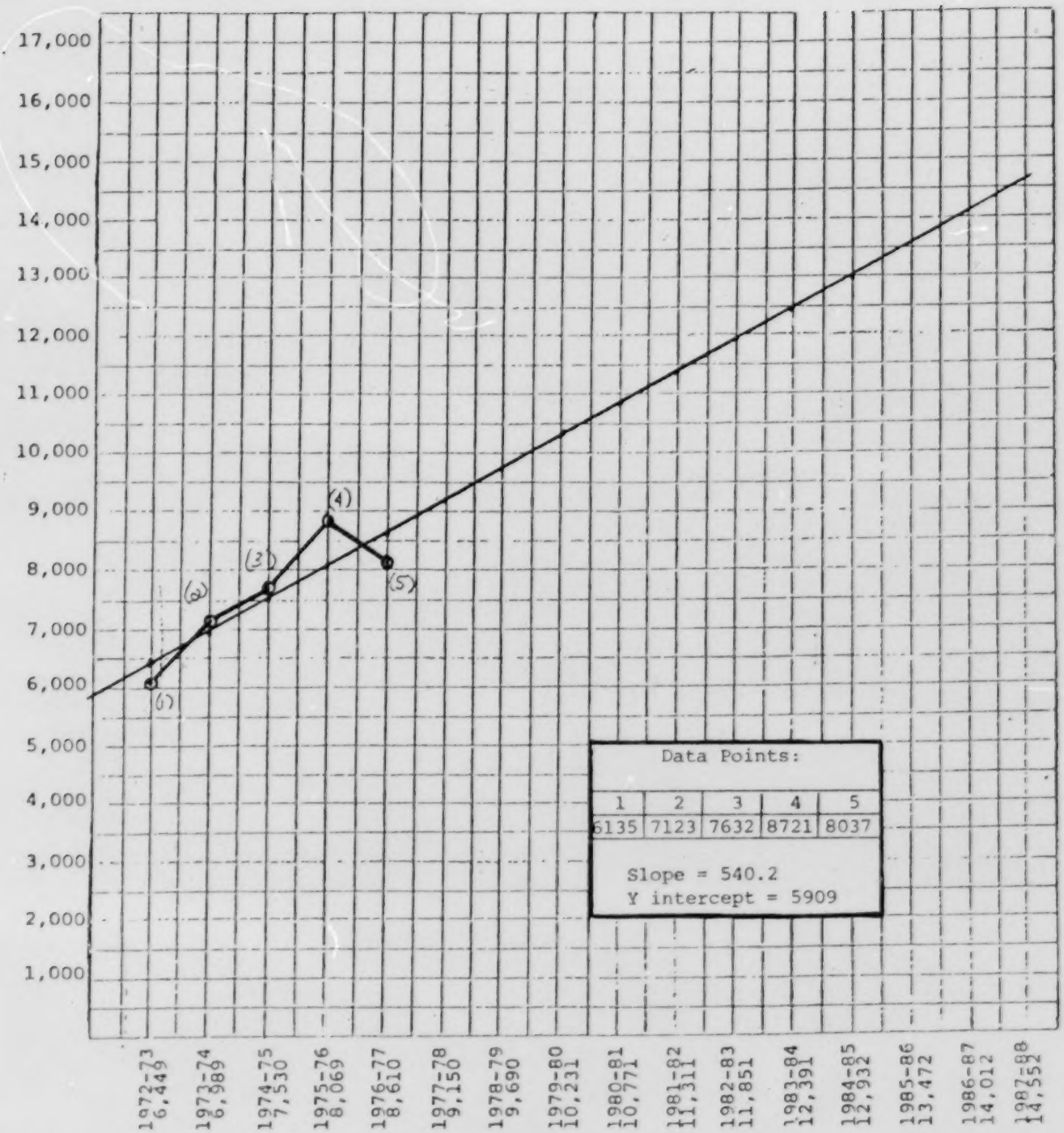


TABLE U

TITLES PURCHASED PER YEAR
BASED ON LINEAR REGRESSION METHOD



CONCLUSIONS

The COM catalog system is the most cost effective approach to meet project objectives with respect to costs, advantages and disadvantages, and requirements of Virginia Beach Department of Public Libraries and Data Processing Department. Table A best summarizes the results. Of the two alternatives for acquiring this system, the in-house system would not be operable for six years. This fact requires that the library continue the current card catalog system at increasing rates. By the conversion year, operation costs would have increased 90% to $256,027.36. By far the least costly and shortest development time is offered by having a vendor produce and maintain a COM catalog system. This system would be operable within the first year, greatly reducing the costs to maintain a catalog system and greatly increasing the ability to expand for future needs.

GLOSSARY[1]

MICROGRAPHICS TERMINOLOGY

The National Microfilm Association (NMA) has drafted and continues to maintain a widely-used glossary of micrographic terms and definitions. The following terms and definitions are included in the NMA Glossary.

COM

1. Computer Output Microfilm: microfilm containing data produced by a recorder from computer generated electrical signals.
2. Computer Output Microfilmer: a recorder which converts data from a computer into human readable language and records it onto microfilm.
3. Computer Output Microfilming: a method of converting data from a computer into human readable language onto microfilm.

COPY (NOUN)

The product obtained from reproducing an original.

DIAZO FILM

A slow print film, sensitized by means of diazonium salts, which subsequent to exposure to light strong in the blue to ultraviolet spectrum and development forms an image. Diazo material generally produces non-reversible images. (Used in copy production.)

FILM

Any sheet or strip of transparent plastic coated with light-sensitive emulsion.

MASTER

The original itself from which copies can be made.

---

[1] Southeastern Library Network. Committee on COM, Computer Output Microfilm (COM): An Alternative To Card Catalog For SOLINET Members, (Atlanta, Ga.: Southeastern Library Network, 1977), pp. 7-9.

MICROFILM

A fine-grain, high resolution film containing an image greatly reduced in size from the original. (Two types of microfilm which fit the present needs of the SOLINET membership are as follows.)

-Microfiche: a sheet of microfilm containing multiple microimages in a grid pattern.
-Roll film: a length of microfilm on a reel, spool, or core.

MICROFORM

A generic term for a form, either film or paper, which contains microimages.

REDUCTION

A measure of the number of times a given linear dimension of an object is reduced when photographed, expressed as 16X, 24X, etc.

SILVER FILM

A film which is coated with a silver halide emulsion. (The film often used in the production of the master film; may be positive or negative.)

VESICULAR FILM

Film which has the light sensitive element suspended in a plastic layer and which upon exposure creates strains within the layer in the form of a latent image. (Either a reversal or a nonreversal image may be produced. Used in copy film production.)

LIBRARY/DATA PROCESSING TERMINOLOGY

For the sake of clarity in this report, the following terms are defined. In defining the following library/data processing terms, Anglo-American Cataloging Rules and Handbook of Data Processing for Libraries were used wherever possible.

CATALOG

A list of books, maps, etc., arranged according to some definite plan.

CARD CATALOG

The familiar form of the library catalog which is updated by interfiling cards.

CATALOG DATA BASE

A machine-readable catalog which contains one record for and comparable to each card maintained in the shelflist.

COLLECTION

The total holdings of a library or group of libraries.

DATA BASE

A file of data in machine language, available for use.

ELAPSED TIME

The amount of time required by a computer to process a procedure or set of procedures; measurement is in terms of solar time as opposed to computer internal processing time.

ENTRY

A record of a bibliographical entity in a catalog or list.

FIELD

A set of characters treated as a whole and used to store any kind of data; a subunit in a record.

HOLDING

A book or work described by both bibliographic detail and copy/volume information.

PROCEDURE

A prescribed set of steps or routines required to accomplish a task.

PUBLICATION

The production procedures required to produce a new edition or a revised, replacement edition.

RECORD (NOUN)

A group of related fields treated as a unit; see entry.

TITLE

The name of a book or work preceding the statement of author, edition, and imprint statement on the title page. In this report, "title" is used interchangeably with the term "catalog data base record."

TRANSACTION

Data representing an event which will affect records in a file by changing them, posting to them, adding them, deleting them, and the like.

UNIT ENTRY

A basic catalog entry, in the form of the main entry, which, when duplicated, may be used as a unit for all other entries for that work in the catalog by the addition of the appropriate headings.

UPDATE

A procedure which includes the processing of transactions within a data base.

COM CATALOG PRODUCTS

As with the term "microfilm," the term "COM catalog" is often used generically and with a wide range of preconceptions. Before any form of microfilm catalog production can be satisfactorily implemented, the term "COM catalog" must be well-defined and understood. As used within the context of this report, the term has the following meaning.

COM CATALOG

A computer-formatted arrangement of bibliographic entries recorded on microfilm, wherein several entries may be displayed for each title in the data base and one or more of the entries contain(s) unit-entry information.

APPENDIX

WORK DISTRIBUTION

Processing Center

TASK	MINUTES/WEEK WORKED BY EMPLOYEES					
	L.A. TRAINEE/ CLERK TYPIST	L.A. I	L.A. II	L.A. SUP.	LIBRARIAN I	LIBRARIAN II
Pre-Catalog Search			185.50		5.25	8.75
Catalog fiction with copy					453.25	18.25
Catalog fiction original					50.00	20.00
Catalog non-fiction with copy		17.25			901.75	119.00
Catalog non-fiction original					181.50	23.25
Add-ons						8.75
Pull order slips						12.50
Pull shelf list cards			58.00			
Add copy number			159.25			
Cut stencils			681.00			
Operate mini-graph			262.50			
Insert cards and instruction sheets in books			65.50			
Type card sets	1,032.00		537.75			
Revision of card sets typing	17.50		312.50			30.50
MINUTES/WEEK						
HOURS/WEEK						

WORK DISTRIBUTION

Processing Center

TASK	MINUTES/WEEK WORKED BY EMPLOYEES					
	L.A. TRAINEE/ CLERK TYPIST	L.A. I	L.A. II	L.A. SUP.	LIBRARIAN I	LIBRARIAN II
Put union cards in envelopes			1.25			1.25
Arrange order slips	29.00		5.75			
Arrange and file shelf list cards	137.50		94.00			
Revise shelf-list					93.50	
Prepare correction sheets						79 00
Add symbols	25.00		42.50			
Remove symbols	37.00					
Sears list			38.50			
MINUTES/WEEK	1278.00	17.25	2444.00		1685.25	321.25
HOURS/WEEK	21.30	.29	40.73		28.09	5.35

TIME CALCULATION WORKSHEET

Processing Center

TASK	JOB TITLE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	AVERAGE WEEKLY TIME (MIN.)	WEEKLY COST ($)
Pre-Catalog Search	Librarian II	11	24	--	--	8.75	1.23
	Librarian I	9	--	12	--	5.25	.56
	Library Assistant II	396	59	287	--	185.50	12.02
						199.50	13.81
Catalog Fiction With Copy	Librarian II	38	5	30	--	18.25	2.56
	Librarian I	13	1048	484	268	453.25	47.95
						471.50	50.51
Catalog Fiction Original	Librarian II	--	61	19	--	20.00	2.81
	Librarian I	54	5	81	60	50.00	5.29
						70.00	8.10
Catalog Non-Fiction With Copy	Librarian II	140	45	75	216	119.00	16.71
	Librarian I	1338	469	279	1521	901.75	95.40
	Library Assistant I	--	--	69	--	17.25	.97
						1038.00	113.08
Catalog Non-Fiction Original	Librarian II	33	--	--	60	23.25	3.26
	Librarian I	--	129	445	152	181.50	19.20
						204.75	22.46
Add-Ons	Librarian II	33	2	--	--	8.75	1.23
						8.75	1.23
Pull Order Slips	Librarian II	6	--	38	6	12.50	.81
						12.50	.81
Pull Shelf List Cards	Library Assistant II	79	28	92	33	58.00	3.76
						58.00	3.76
Add Copy Number	Library Assistant II	259	39	304	35	159.25	10.32
						159.25	10.32
Cut Stencils	Library Assistant II	810	567	647	700	681.00	44.13
						681.00	44.13

TIME CALCULATION WORKSHEET

Processing Center

TASK	JOB TITLE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	AVERAGE WEEKLY TIME (MIN.)	WEEKLY COST ($)
Operate Mini-Graph	Library Assistant II	361	243	213	233	262.50	17.01
						262.50	17.01
Insert Cards And Instruction Sheets In Books	Library Assistant II	101	59	56	46	65.50	4.24
						65.50	4.24
Type Card Sets	Library Assistant II	1025	663	120	343	537.75	34.85
	Library Assistant Trainee	1320	704	827	1277	1032.00	50.77
						1569.75	85.62
Revision of Card Sets Typing	Librarian II	--	--	--	122	30.50	4.28
	Library Assistant II	520	26	356	348	312.50	20.25
	Library Assistant Trainee	--	--	26	44	17.50	.86
						360.50	25.39
Put Union Cards In Envelopes	Librarian II	--	--	--	5	1.25	.18
	Library Assistant II	--	--	--	5	1.25	.08
						2.50	.26
Arrange Order Slips And Send To Reference	Library Assistant II	--	--	23	--	5.75	.37
	Library Assistant Trainee	29	44	--	44	29.00	1.43
						34.75	1.80
Arrange And File Shelf List Cards	Library Assistant II	33	74	46	232	94.00	6.09
	Library Assistant Trainee	357	130	63	--	137.50	6.76
						231.50	12.85
Revise Shelf-List	Librarian I	132	105	47	90	93.50	9.89
						93.50	9.89

TIME CALCULATION WORKSHEET

Processing Center

TASK	JOB TITLE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	AVERAGE WEEKLY TIME (MIN.)	WEEKLY COST ($)
Prepare Correction Sheet	Librarian II	96	36	90	94	79.00	11.09
						79.00	11.09
Add Symbols	Library Assistant II	170	--	--	--	42.50	2.75
	Library Assistant Trainee	--	100	--	--	25.00	1.23
						67.50	3.98
Remove Symbols	Library Assistant Trainee	3	--	19	126	37.00	1.82
						37.00	1.82
Sears List	Library Assistant II	154	--	--	--	38.50	2.49
						38.50	2.49
						5745.75 min. or 95.76 hrs.	$ 445.68

PERSONNEL COST

Processing Center

#1 JOB TITLES	#2 HOURS WORKED/WEEK	#3 HOURLY RATE	#4 WEEKLY COST (#2 X #3)	#5 MONTHLY COST (#6 ÷ 12 MO.)	#6 ANNUAL COST (#4 X 52 WKS.)
Librarian II	5.35	$ 8.42	$ 45.05	$ 195.22	$ 2,342.60
Librarian I	28.09	$ 6.35	$ 178.37	$ 772.94	$ 9,275.24
Library Assistant II	40.73	$ 3.89	$ 158.44	$ 686.57	$ 8,238.88
Library Assistant I	.29	$ 3.39	$ .98	$ 4.25	$ 50.96
Library Assistant Trainee	21.30	$ 2.95	$ 62.84	$ 272.31	$ 3,267.68
TOTALS	95.76		$ 445.68	$ 1,931.29	$ 23,175.36

WORK DISTRIBUTION

Branch _____

TASK	MINUTES/WEEK WORKED BY EMPLOYEES					
	L.A. TRAINEE/ CLERK TYPIST	L.A. I	L.A. II	L.A. SUP.	LIBRARIAN I	LIBRARIAN II
Separate cards from new books			6.25	37.50		[illegible].75
Revise and separate cards						47.25
Alphabetize cards	162.50		125.00			
Top filing cards	2.50		393.75			
Revise filing			17.50	63.75		
Generate correction sheets			15.00	41.25		3.00
Add-delete union symbols	77.75	162.50	757.50	231.25		65.75
Change classification numbers				48.75		
Change entries				173.75		
Add new card sets			15.00			18.75
Add to Sears subject list						17.00
McNaughton cards			148.75			
MINUTES/WEEK	242.75	162.50	1478.75	596.25		153.50
HOURS/WEEK	4.05	2.71	24.65	9.94		2.56

TIME CALCULATION WORKSHEET

Branch _____

TASK	JOB TITLE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	AVERAGE WEEKLY TIME (MIN.)	WEEKLY COST ($)
Separate Cards From New Books	Librarian II	--	--	7	--	1.75	.25
	Library Assistant Supervisor	30	120	--	--	37.50	3.05
	Library Assistant II	--	10	--	15	6.25	.41
						45.50	3.71
Revise and Separate Cards	Librarian II	20	116	48	5	47.25	6.63
						47.25	6.63
Alphabetize Cards	Library Assistant II	125	--	375	--	125.00	8.10
	Clerk Typist	240	170	120	120	162.50	8.00
						287.50	16.10
Top Filing Cards	Library Assistant II	235	550	110	680	393.75	25.52
	Library Assistant Trainee	10	--	--	--	2.50	.12
						396.25	25.64
Revise Filing	Library Assistant Supervisor	25	--	230	--	63.75	5.18
	Library Assistant II	--	--	--	70	17.50	1.13
						81.25	6.31
Generate Correction Sheets	Librarian II	12	--	--	--	3.00	.42
	Library Assistant Supervisor	--	--	165	--	41.25	3.35
	Library Assistant II	--	--	60	--	15.00	.97
						59.25	4.74

TIME CALCULATION WORKSHEET

Branch _____

TASK	JOB TITLE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	AVERAGE WEEKLY TIME (MIN.)	WEEKLY COST ($)
Add/Delete Union Symbols	Librarian II	152	36	15	60	65.75	9.23
	Library Assistant Supervisor	125	395	210	195	231.25	18.78
	Library Assistant II	645	810	760	815	757.50	49.09
	Library Assistant I	230	270	60	90	162.50	9.18
	Library Assistant Trainee	136	65	35	75	77.75	3.83
						1294.75	90.11
Change Classification Number	Library Assistant Supervisor	45	150	--	--	48.75	3.96
						48.75	3.96
Change Entries	Library Assistant Supervisor	300	70	240	85	173.75	14.11
						173.75	14.11
Add New Card Sets	Librarian II	--	--	50	25	18.75	2.63
	Library Assistant II	--	--	60	--	15.00	.97
						33.75	3.60
Add to Sears Subject Heading List	Librarian II	68	--	--	--	17.00	2.39
						17.00	2.39
McNaughton Cards	Library Assistant II	305	35	75	180	148.75	9.64
						148.75	9.64
						2633.75 min. or 43.91 hrs.	$ 186.99

PERSONNEL COST

Branch _____

#1 JOB TITLES	#2 HOURS WORKED/WEEK	#3 HOURLY RATE	#4 WEEKLY COST (#2 X #3)	#5 MONTHLY COST (#6 ÷ 12 MO.)	#6 ANNUAL COST (#4 X 52 WKS.)
Librarian II	2.56	$ 8.42	$ 21.56	$ 93.43	$ 1,121.12
Library Assistant Supervisor	9.94	$ 4.87	$ 48.41	$ 209.77	$ 2,517.21
Library Assistant II	24.65	$ 3.89	$ 95.89	$ 415.52	$ 4,986.28
Library Assistant I	2.71	$ 3.39	$ 9.19	$ 39.82	$ 477.88
Library Assistant Trainee	1.34	$ 2.95	$ 3.95	$ 17.12	$ 205.40
Clerk Typist	2.71	$ 2.95	$ 7.99	$ 34.62	$ 415.48
TOTALS					
FOR 1 BRANCH	43.91		$ 186.99	$ 810.28	$ 9,723.37
FOR ALL 5 BRANCHES			$ 934.95	$ 4,051.40	$ 48,616.85

EQUIPMENT COST — Typewriters

#1 EQUIPMFNT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Typewriter, Remington Manual	003942	194.00	4/16/63	1.62	5	.08	.96
Typewriter, Royal Elec.	018956	505.00	9/28/73	4.20	50	2.10	25.20
Typewriter, IBM Selectric	** 5354	408.00	2/26/71	3.40	5	.17	2.04
Typewriter	003471	194.00	6/15/63	1.62	5	.08	.96
Typewriter, Remington	3455	404.00	8/28/68	3.31	5	.17	2.04
Typewriter, IBM Selectric	022058	729.00	9/30/76	6.07	80	4.85	58.20
Typewriter	018965	572.00	4/30/75	4.76	10	.47	5.64
Typewriter, Elec.	052814	506.00	9/28/73	2.21	5	.11	1.32
Typewriter, IBM, Selectric	022121	729.00	9/30/76	6.08	80	4.86	58.32
Typewriter, IBM, Selectric	022122	729.00	9/30/76	6.08	60	3.64	43.68
Typewriter, IBM, Selectric	022123	729.00	9/30/76	6.08	60	3.64	43.68
Typewriter, IBM, Selectric	022124	729.00	9/30/76	6.08	60	3.64	43.68
Typewriter, IBM, Selectric	022125	729.00	9/30/76	6.08	60	3.64	43.68
Typewriter, IBM, Selectric	022126	729.00	9/30/76	6.08	50	3.04	36.48
			TOTALS	63.67		30.49	365.88

*Life Expectancy
**Not on inventory list

EQUIPMENT COST — Typewriters

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Totals Brought Forward				63.67		30.49	365.88
Typewriter, IBM, Executive	** 049123				50		
Typewriter, Remington 26	** 6961				100		
TOTALS				63.67		30.49	365.88

*Life Expectancy
**Not on inventory list

EQUIPMENT COST

Card Catalog

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Card Catalog, 45-drawer	018610	622.00	11/30/74	5.18	100	5.18	62.16
Card Catalog, 30-drawer	018616	458.00	11/30/74	3.82	100	3.82	45.84
Card Catalog, 30-drawer	018914	475.00	10/22/75	3.95	100	3.95	47.40
Card Catalog, 30-drawer	018918	475.00	10/22/75	3.95	100	3.95	47.40
Card Catalog, 30 drawer	018605	485.00	11/30/74	4.04	100	4.04	48.48
Card Catalog, 60-drawer	022773	822.60	4/22/77	6.85	100	6.85	82.20
Card Catalog, 30-drawer	018620	459.00	11/30/74	3.83	100	3.83	45.96
Card Catalog, 30-drawer	018926	433.00	6/12/74	3.61	100	3.61	43.32
Card Catalog	052683	1,097.00	12/28/73	9.14	100	9.14	109.68
Card Catalog	** 052684				100		
Card Catalog	051028	300.00	4/30/59	2.50	100	2.50	30.00
Card Catalog	051029	300.00	4/30/59	2.50	100	2.50	30.00
Card Catalog	051030	300.00	4/30/59	2.50	100	2.50	30.00
Card Catalog	019563	690.00	6/17/76	5.85	100	5.85	70.20
			TOTALS	57.72		57.72	692.64

*Life Expectancy
**Not on inventory list

EQUIPMENT COST — Card Catalog

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.
Totals Brought Forward				57.72		57.72	692.64
Card Catalog, 5-drawer	**	92.00		.77	100	.77	9.24
Card Catalog, 3-drawer	**	71.05		.59	100	.59	7.08
Card Catalog	018597	174.00	10/22/75	1.45	100	1.45	17.40
Card Catalog	018598	58.00	10/22/75	.48	100	.48	5.76
Card Catalog	018599	174.00	10/22/75	1.45	100	1.45	17.40
Card Catalog	018600	69.00	10/22/75	.57	100	.57	6.84
Card Catalog	018131	32.00	10/22/75	.26	100	.26	3.12
Card Catalog, 5-drawer	** 022564				100		
Card Catalog, 5-drawer	** 022563				100		
Card Catalog, 120-drawer	022515	2,464.83	2/8/77	20.54	100	20.54	246.48
Card Catalog, 30-drawer	022485	610.53	2/8/77	5.08	100	5.08	60.96
Card Catalog	014957	384.00	11/30/74	3.20	100	3.20	38.40
Card Catalog	014954	328.00	11/30/74	2.73	100	2.73	32.76
			TOTALS	94.84		94.84	1,138.08

*Life Expectancy
**Not on inventory list

EQUIPMENT COST Card Catalog

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Totals Brought Forward				94.84		94.84	1,138.08
Card Catalog	018643	164.00	6/12/74	1.36	100	1.36	16.32
Card Catalog	014944	384.00	12/30/74	3.20	100	3.20	38.40
Card Catalog	018644	164.00	6/12/74	1.36	100	1.36	16.32
Card Catalog	022812	204.20	4/22/77	1.70	100	1.70	20.40
Card Catalog	018937	752.00	4/22/76	6.26	100	6.26	75.12
Card Catalog	**				100		
Card Catalog	**				100		
Card Catalog Cabinet Tops	050873	1,055.00	9/11/68	8.78	100	8.78	105.36
Card Catalog Cabinet Tops	050874	1,055.00	9/11/68	8.78	100	8.78	105.36
Card Catalog Cornice Top	018648	36.00	3/11/76	.30	100	.30	3.60
Card Catalog, Leg Base	022813	76.60	4/22/77	.63	100	.63	7.56
Card Catalog, Leg Base	018600	69.00	10/22/75	.57	100	.57	6.84
Card Catalog, 60-drawer	050703	1,430.00	7/17/67	11.75	100	11.75	141.00
			TOTALS	139.53		139.53	1,674.36

*Life Expectancy 82

EQUIPMENT COST — Card Catalog

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Totals Brought Forward				139.53		139.53	1,674.36
Card Catalog, 60-drawer	050704	1,430.00	7/17/67	11.75	100	11.75	141.00
Card Catalog, 60-drawer	022760	822.60	4/22/77	6.85	100	6.85	82.20
Card Catalog, 60-drawer	022761	822.60	4/22/77	6.85	100	6.85	82.20
Card Catalog, 30-drawer	018649	36.00	3/11/76	.30	100	.30	3.60
Card Catalog, 30-drawer	014956	384.00	11/30/74	3.20	100	3.20	38.40
Card Catalog, 30-drawer	018130	32.00	10/22/75	.26	100	.26	3.12
Card Catalog, 30-drawer	014952	384.00	11/30/74	3.20	100	3.20	38.40
Card Catalog, 30-drawer	018887	196.00	12/28/73	1.63	100	1.63	19.56
Card Catalog, 30-drawer	018633	174.00	10/22/75	1.45	100	1.45	17.40
Shelf List, Maple	** 050676				100		
Shelf List, Walnut	018971	27.00	11/30/74	.23	100	.23	2.76
Shelf List, Walnut	018972	164.00	11/30/74	1.33	100	1.33	15.96
Shelf List, Walnut	018973	47.00	11/30/74	.39	100	.39	4.68
			TOTALS	176.97		176.97	2,123.64

*Life Expectancy
**Not on inventory list

EQUIPMENT COST

Card Catalog

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Totals Brought Forward				176.97		176.97	2,123.64
Shelf List, Walnut	018974	164.00	11/30/74	1.33	100	1.33	15.96
Shelf List, Walnut	018976	27.00	11/30/74	.23	100	.23	2.76
Shelf List, Walnut	018977	164.00	11/30/74	1.33	100	1.33	15.96
Shelf List, Walnut	018978	47.00	11/30/74	.39	100	.39	4.68
Shelf List, Walnut	018979	164.00	11/30/74	1.33	100	1.33	15.96
			TOTALS	181.58		181.58	2,178.96

60

*Life Expectancy

EQUIPMENT COST

Book Trucks

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Book Truck/Metal/Sand/2-Shelf	050684	40.00	8/15/67	3.33	50	1.66	19.92
Book Truck/Metal/Sand/2-Shelf	050686	40.00	8/15/67	3.33	100	3.33	39.96
Book Truck/Metal/Sand/2-Shelf	050687	40.00	8/15/67	3.33	100	3.33	39.96
Book Truck/Metal/3-Shelf	018959	69.00	1/11/74	5.75	100	5.75	69.00
Book Truck/Metal/3-Shelf	018962	69.00	1/11/74	5.75	100	5.75	69.00
Book Truck/Metal/3-Shelf	018966	72.00	9/19/72	.60	100	.60	7.20
Book Truck/Metal/3-Shelf	018967	72.00	9/19/72	.60	100	.60	7.20
Book Truck/Metal/3-Shelf	018968	66.00	11/9/71	.55	100	.55	6.60
Book Truck/Metal/3-Shelf	018969	66.00	11/9/71	.55	100	.55	6.60
Book Truck/Metal/3-Shelf	022129	96.00	7/30/76	.80	100	.80	9.60
Book Truck/Metal/3-Shelf	022130	96.00	7/30/76	.80	100	.80	9.60
Book Truck/Metal/3-Shelf	022131	96.00	7/30/76	.80	100	.80	9.60
Book Truck/Metal/3-Shelf	022133	96.00	7/30/76	.80	100	.80	9.60
Book Truck/Metal/3-Shelf	022134	96.00	7/30/76	.80	100	.80	9.60
			TOTALS	27.79		26.12	313.44

*Life Expectancy

EQUIPMENT COST

Book Trucks

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Totals Brought Forward				27.79		26.12	313.44
Book Truck/Metal/3-Shelf	022135	96.00	7/30/76	.80	50	.40	4.80
Book Truck/Wooden/3-Shelf	050698	59.00	7/17/67	.49	100	.49	5.88
Book Truck/Wooden/3-Shelf	050699	59.00	7/17/67	.59	50	.24	2.88
			TOTALS	29.57		27.25	327.00

*Life Expectancy

EQUIPMENT COST Chairs

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Chair, Executive Desk	014933	106.00	7/31/75	.88	25	.22	2.64
Chair, Secretary	018970	44.00	4/8/75	.37	5	.02	.24
Chair, Side, w/arms	018928	24.00	2/16/73	.20	25	.05	.60
Chair, Executive Desk	050589	55.00	2/1/66	4.58	50	2.29	27.48
Chair	** 011610				50		
Chair	051385	23.00	3/31/66	.19	20	.03	.36
Chair, Swivel	051098	54.00	3/9/59	.45	3	.01	.12
Chair	** 050982	12.00	9/13/61	.10	5		
Chair	051170	31.00	4/30/59	2.58	5	.14	1.68
Chair, Typist	050523	45.00	4/25/64	.38	5	.02	.24
Chair	050591	51.00	7/17/67	.43	50	.21	2.52
Chair	022069	94.00	9/27/76	.78	80	.62	7.44
Chair	014922	106.00	7/31/75	.88	.6		
Chair	050960	44.00	7/10/67	.37	10	.03	.36
			TOTALS	12.19		3.64	43.68

*Life Expectancy
**Not on inventory list

EQUIPMENT COST — Chairs

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COS (#7 X 12 M
Totals Brought Forward				12.19		3.64	43.68
Chair	018638	51.00	6/30/75	.42	5	.02	.24
Chair, Typist	018960	45.00	2/28/74	.37	5	.01	.12
Chair	018957	42.00	2/16/73	.35	10	.03	.36
Chair/Typing/Green	022063	94.00	9/27/76	.78	80	.62	7.44
Chair/Typing/Green	022064	94.00	9/27/76	.78	60	.46	5.52
Chair/Typing/Green	022065	94.00	9/27/76	.78	60	.46	5.52
Chair/Typing/Green	022066	94.00	9/27/76	.78	60	.46	5.52
Chair/Typing/Green	022067	94.00	9/27/76	.78	60	.46	5.52
Chair/Typing/Green	022068	94.00	9/27/76	.78	50	.39	4.68
Chair/Typing/Cinnamon	019995	94.00	9/27/76	.78	100	.78	9.36
Chair/Typing/Cinnamon	019996	94.00	9/27/76	.78	100	.78	9.36
Chair/Typing/Cinnamon	019997	94.00	9/27/76	.78	20	.15	1.80
Chair/Typing/Cinnamon	019998	94.00	9/27/76	.78	20	.15	1.80
			TOTALS	21.13		8.41	100.92

94

*Life Expectancy

EQUIPMENT COST Chairs

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Totals Brought Forward				21.13		8.41	100.92
Chair/Typing/Cinnamon	019999	94.00	9/27/76	.78	20	.15	1.80
Chair/Typing/Cinnamon	020000	94.00	9/27/76	.78	20	.15	1.80
Chair/Green/with Arms	016202	106.00	7/31/75	.88	50	.44	5.28
			TOTALS	23.57		9.15	109.80

*Life Expectancy

EQUIPMENT COST Desks

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Desk	051237	200.00	4/13/66	1.67	25	.41	4.92
Desk	051235	135.00	9/11/67	1.13	50	.56	6.72
Desk	051083	280.00	4/25/64	2.33	3	.06	.72
Desk/Drawer	050683	135.00	9/11/67	1.10	100	1.10	13.20
Desk	022048	213.65	10/20/76	1.78	80	1.42	17.04
Desk	051238	200.00	4/13/66	1.66	.6		
Desk, Typist	050678	99.00	3/1/68	.83	5	.04	.48
Desk/L-Shape/Typist/Metal	022303	213.65	10/20/76	1.78	60	1.06	12.72
Desk/L-Shape/Typist/Metal	022304	213.65	10/20/76	1.78	60	1.06	12.72
Desk/L-Shape/Typist/Metal	022305	213.65	10/20/76	1.78	60	1.06	12.72
Desk/L-Shape/Typist/Metal	022306	213.65	10/20/76	1.78	60	1.06	12.72
Desk/L-Shape/Typist/Metal	022307	213.65	10/20/76	1.78	50	.89	10.68
Desk/L-Shape/Typist/Metal	022308	213.65	10/20/76	1.78	50	.89	10.68
Desk/Grey/Metal	018940	117.00	2/16/73	.98	100	.98	11.76
			TOTALS	22.16		10.59	127.08

*Life Expectancy

EQUIPMENT COST Desks

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Totals Brought Forward				22.16		10.59	127.08
Desk/Wooden/Walnut	057873	56.00	11/17/69	.47	100	.47	5.64
TOTALS				22.63		11.06	132.72

*Life Expectancy 120

EQUIPMENT COST

Tables

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Table	051254	77.00	3/17/60	.64	50	.32	3.84
Table	** 051262	77.00	3/17/60	.64	20	.12	1.44
Table, Typewriter	051082	14.00	3/30/61	.12	5		
Table, Study	051165	130.00	3/9/59	1.09	15	.07	.84
Table	050515	80.00	7/17/67	.66	5	.03	.36
Table	050861	155.00	9/11/68	1.28	5	.06	.72
Table	018141	61.00	11/24/75	.50	10	.05	.60
Table	** 051069				80		
Table	050673	40.00	2/13/62	.33	100	.33	3.96
Table	022071	446.65	10/20/76	3.72	40	1.48	17.76
			TOTALS	8.98		2.46	29.52

*Life Expectancy
**Not on inventory list

EQUIPMENT COST — File Cabinets

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
File Cabinet, 8-drawer	051248	140.00	1/24/66	1.17	100	1.17	14.04
File Cabinet	051085	175.00	7/15/65	1.46	13	.19	2.28
File Cabinet	051084	175.00	7/15/65	1.46	13	.18	2.16
File Cabinet	050611	146.00	6/26/67	1.20	100	1.20	14.40
File Cabinet	022073	156.70	10/20/76	1.31	100	1.31	15.72
			TOTALS	6.60		4.05	48.60

*Life Expectancy

69

EQUIPMENT COST — Machine & Typewriter Stands

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Typewriter Stand, Tiffany	012704	60.00	2/28/74	.50	5	.02	.24
Machine Stand, 26"	018314	76.00	2/24/76	.63	5	.15	1.80
Typewriter Stand	050902	30.00	9/19/66	.25	10	.02	.24
Typing Stand, Walnut	022519	93.68	12/3/76	.78	100	.78	9.36
Typing Stand, Beige					80		
			TOTALS	2.16		.97	11.64

*Life Expectancy

EQUIPMENT COST Shelves

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Reference Shelves	018645	47.00	6/12/74	.37	100	.37	4.44
Reference Shelves	018598	58.00	11/22/75	.48	100	.48	5.76
			TOTALS	.85		.85	10.20

*Life Expectancy

EQUIPMENT COST Microfiche Reader

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Microfiche Reader	013662	156.00	4/25/75	1.30	5	.06	.72
			TOTALS	1.30		.06	.72

110

*Life Expectancy

EQUIPMENT COST Stools

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Kickstep Stool	051064	15.00	10/12/65	.13	50	.07	.84
Stool, High Back	**				70		
TOTALS				.13			.84

112

*Life Expectancy
**Not on inventory list

73

EQUIPMENT COST

Card Duplicator

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Card Duplicator	060495 011364	297.00	4/4/72	2.47	100	2.47	29.64
			TOTALS	2.47		2.47	29.64

*Life Expectancy

EQUIPMENT COST — Reader Printer

#1 EQUIPMENT DESCRIPTION	#2 INVENTORY NO.	#3 PURCHASE PRICE	#4 PURCHASE DATE	#5 MONTHLY COST (#3 ÷ 120 MO*)	#6 % USED	#7 MONTHLY % USED COST (#5 X #6)	#8 ANNUAL % USED COST (#7 X 12 MO.)
Reader Printer, 3M	**	4,177.93	9/16/77	34.82	50	17.41	208.90
			TOTALS	34.82		17.41	208.90

*Life Expectancy
**Not on inventory list

SPACE COST

BRANCH/DIVISION	SQUARE FEET USE
Processing	836.00
Great Neck	52.35
Kempsville	37.70
Reference	23.02
Bayside	50.40
Virginia Beach	83.64
Windsor Woods	123.00
	TOTALS 1,206.11
	GRAND TOTAL =*$2.67/SQ. FT. X SPACE $ 3,220.31

*Cost per square foot as determined by Department of Data Processing study

SUPPORT SERVICES COST

SUPPORT SERVICE	SUPPLIED BY	MONTHLY COST	ANNUAL COST
Typewriter Repairs - Maintenance Contract @ $34.00 per machine/yr.	Abbott Typewriter Sales & Service		
Bayside 1 machine		$ 2.83	$ 34.00
Extension Services 1 machine		2.83	34.00
Great Neck 1 machine		2.83	34.00
Kempsville 1 machine		2.83	34.00
Processing 8 machines		22.67	272.00
Reference 1 machine		2.83	34.00
Virginia Beach 1 machine		2.83	34.00
Windsor Woods 1 machine		2.83	34.00
Adding Machines (5)		6.25	75.00
Micro Reader-Printer Repairs	3M	20.83	250.00
Xerox Machines (1)	Xerox	175.00	2,100.00
	TOTALS	$ 244.56	$ 2,935.00

SUPPLY COST

Processing Center

ITEM	COST
Catalog Cards, regular	$ 1,424.65
Catalog Cards, red band	$ 41.25
Stencils	$ 1,093.40
Ink-Minigraph (bottles)	$ 76.90
Typewriter Ribbons	
IBM	$ 204.50
IBM Lift-off	$ 230.85
Royal	$ 78.12
Remington	$ 76.00
Legal Pads	$ 98.24
Paper Clips	$ 12.13
Typing Paper	$ 33.75
Scratch Pads 5x8	$ 33.87
Scratch Pads 3x5	$ 20.79
Xerox Paper-legal size	$ 863.50
Xerox Paper-letter size	$ 255.80
TOTAL	$ 4,543.75

SUPPLY COST 5 Branches

ITEM	COST
Card sorters	$ 91.62
Catalog Card Protectors	
(latest volume in reference)	$ 39.76
Tilted Tab Catalog card guide	$ 38.25
Self-indexing guides	$ 176.00
	TOTAL $ 345.63

OVERHEAD COST

THE OVERHEAD COST AS SUPPLIED BY DATA PROCESSING IS 60 % OF SALARY COST.		
WEEKLY OVERHEAD COST	($445.68 + $934.95) X .60 =	$ 828.38
MONTHLY OVERHEAD COST	($1,931.29 + $4,051.40) X .60 =	$ 3,589.61
ANNUAL OVERHEAD COST	($23,175.36 + $48,616.85) X .60 =	$43,075.33